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OFFICIAL HISTORY

OF

THE RUSSO-JAPANESE WAR.

PART III.

THE SIEGE OF PORT ARTHUR.

PREPARED BY

THE HISTORICAL SECTION

OF THE COMMITTEE OF IMPERIAL DEFENCE.

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PREFACE.

LIKE its predecessors, Part III of the Official History of the Russo-Japanese War forms an advanced portion of the combined naval and military history which is in course of preparation by the Committee of Imperial Defence. It deals with the siege of Port Arthur from the battle of Nan Shan to the fall of the fortress. The earlier events of the war have been summarized, and only the briefest reference has been made to the military operations which occurred in other parts of the theatre of war during the period covered by this volume. Similarly naval operations, even those of the Port Arthur fleet, are touched upon only in so far as they affected the movements of the Japanese Third Army; and in accordance with the wishes of the General Staff all comments, except upon a few tactical details, are withheld until the production of the combined history.

The principal works consulted, in addition to reports by British attachés, were *Japanese Official Reports*, M. Kinai; *Reminiscences of the working of the First Pacific Squadron and the Naval Brigade on Shore*, Captain M. Bubnov; *Port Arthur's Days of Agony*, P. Larenko; *The Truth about Port Arthur*, E. K. Nojine; and *The Defence of Port Arthur*, J. Romanovski and A. von Schwartz. The last-named work gives by far the fullest and most accurate account of the Russian operations on land, but, unfortunately, only the first part has yet been published, and the story is broken off at the end of July, 1904.

The maps are based upon Russian and Japanese surveys which were filled in, both during and after the siege, from personal observation; a work in which the British attachés received every possible assistance from the Japanese General Staff.

It is, therefore, hoped that Part III will give as accurate an idea of the siege and defence of Port Arthur as it is possible to obtain from the material at present available. But in order to assist the reader to appreciate the relationship between these operations and the movements of the field armies, Strategical Maps 2 and 3 have been corrected and reproduced from Part II, and the following short diary of the more important events outside the Kuan-tung Peninsula has been added.

COMMITTEE OF IMPERIAL DEFENCE,
2, *Whitehall Gardens*,
11*th May*, 1909.

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DIARY OF EVENTS.

1904.

5th February.—Diplomatic relations broken off by the Japanese Minister in St. Petersburg.

27th February.—Japanese 12th Division completed its disembarkation at Chemulpo.

6th March.—Admiral Kamimura bombarded Vladivostok.

27th March.—General Kuropatkin arrived at Harbin from Europe.

28th March.—Japanese Guard and Second Divisions completed their disembarkation at Chinampo.

21st April.—The Japanese First Army reached the Ya-lu.

1st May.—Battle of the Ya-lu. The Japanese First Army under General Kuroki defeated the Russian "Eastern Force" under General Zasulich.

5th May.—The Japanese Second Army began to disembark at Pi-tzu-wo.

19th May.—The Japanese 10th Division began to land at Ta-ku-shan.

26th May.—Battle of Nan Shan.

28th May.—General Stakelberg ordered to march to the relief of Port Arthur.

7th June.—The Japanese First Army began to advance from Feng-huang-cheng.

8th June.—The Japanese 10th Division occupied Hsiu-yen.

14th-15th June.—Battle of Te-li-ssŭ—General Stakelberg defeated by Japanese Second Army under General Oku.

27th June.—Japanese 10th Division captured the Fen-shui Ling.

29th June.—Japanese First Army seized the Mo-tien Ling.

6th July.—Marshal Oyama left Tokio for Manchuria.

17th July.—Unsuccessful attack by Count Keller upon the Mo-tien Ling.

25th-26th July.—Battle of Ta-shih-chiao. General Zarubaiev, with the 1st and 4th Siberian Corps, defeated by the Japanese Second Army under General Oku—Newchuang occupied by General Oku's cavalry.

31st July.—Battle of Yang-tzu Ling—Yu-shu Ling. Japanese First Army defeated the Russian "Eastern Force."

3rd August.—The Japanese Second Army occupied Hai-cheng.

23rd August—5th September.—Advance of the three Japanese field armies, and the battle of Liao-yang.

9th-14th October.—The battle on the Sha Ho.

15th October.—The Baltic Fleet left Libau under Admiral Rozhestvenski.

19th December.—The Baltic Fleet passed Cape Town.

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CHAPTER XIII.

Introductory. Map III/1.

Port Arthur lies at the end of the small peninsula, which forms the south-western extremity of Liao-tung and is known by the Chinese as Kuan-tung. Near the town of Chin-chou the peninsula narrows to a neck about 3,500 yards from sea to sea; south of the neck lies Ta-lien Bay, on the southern shore of which is situated the modern town of Dalny. The distance from Dalny to Port Arthur, in a direct line, is about twenty-three miles, but the country is so broken and mountainous that the railway is forced to make a wide detour, and for part of its length follows the northern shore. Three good roads traverse the peninsula from east to west, and a network of Chinese tracks, hard but narrow, covers the country between them. In the low ground the soil is sandy, and in wet weather the unmetalled roads quickly become impassable morasses, while in dry weather the dust is very trying both for men and animals. The rainfall is not heavy, and occurs mostly in July and August. Snow is rare, heavy falls being almost unknown. In the summer months the heat is at times exhausting; but the winter, although cold, is fine and bracing except during the occasional northerly gales, when the cold grows intense. Water is found in many of the valleys and, although it becomes scarce soon after the close of the rainy season of July and August, can nearly always be obtained from wells of no great depth. Among the mountains villages are small and scattered, but on the low ground, where cultivation is universal, they are larger and are found at closer intervals. In the immediate neighbourhood of Port Arthur, especially to the west, the plain is everywhere dotted with houses. The low ground is much cut up by ravines or watercourses, which in places attain a width and depth of twenty feet and render difficult the movement of cavalry.

General description of country.

The history of Port Arthur as a modern naval station dates only from 1880, in which year a German officer in the employment of Li Hung-chang was sent there to carry out a survey. In December, 1880, work was begun on the first fortifications, and continued until the outbreak of war between China and Japan in 1894. During this period, £8,500,000 had been spent, and an unimportant fishing village had been converted into the best military port in China, provided with a dock, a naval arsenal, workshops, magazines, and torpedo stores. Electric

History of Port Arthur.

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light was installed throughout, and a telegraph line connected the place with Newchuang and Peking.

Under the Chinese regime the coast fortifications of Port Arthur were comparatively strong and well armed, but on the land side the defences were undoubtedly weak. The necessity for holding the neck near Chin-chou seems to have been recognized, but, although batteries were erected near Ta-lien-wan, neither Chin-chou nor the neck were efficiently fortified, and when, during the war with China, the Japanese attacked on the 6th November, 1894, they secured possession of all those important points without difficulty; indeed the batteries at Ta-lien-wan were evacuated without a blow, their garrisons fleeing to Port Arthur. The Japanese, whose force consisted of the 1st Division, a mixed brigade and two squadrons of cavalry, were thus enabled to make Ta-lien-wan their base for an advance against the fortress, where there was a garrison of fourteen thousand Chinamen, of whom, however, only three thousand had any fighting value.

Leaving small garrisons at Chin-chou and Ta-lien-wan, the Japanese advanced in two columns on the 17th November, 1894. The Mandarin Road, or main road from Chin-chou, was at that period the best route in the Kuan-tung Peninsula, and along it the main Japanese force moved, while a detachment made a demonstration along a track near the southern shore. This little body was entirely cut off from assistance, and it would seem that it escaped destruction merely through the ineptitude of the Chinese. However, no important fighting occurred until the 20th, when a Japanese reconnoitring force was roughly handled in the vicinity of Tu-cheng-tzu.

Capture of Port Arthur 1894.

Although the works forming the land defences of Port Arthur were classed as forts, none of them were really formidable; for they were merely earthen redoubts mounting guns of various calibres, and could easily be rushed by determined infantry. The line of defence, which extended almost unbroken from Fort Ta-an-tzu Shan to Pai-yin Battery (Map III/2), consisted of a chain of so-called forts connected by the Chinese Wall which was to figure so prominently in the great siege of 1904. Detached works prolonged the line on either flank. On the sea front the defences were far stronger, being in many cases provided with closed gorges of masonry and with underground casemates for the garrisons.

The attack was fixed for the morning of the 21st November. Thirty-six siege guns, with sixty-four field and mountain guns, were to silence the fire of the Chinese artillery, after which the 1st Division was to carry the works of Yi-tzu Shan, Ta-an-tzu Shan, An-tzu Shan East, and Sung-shu, in the order named; the Mixed Brigade was to wait for the capture of these works, and was then to assault the line from Fort Erh-lung to Pai-yin Battery inclusive. The detachment which had marched by the southern road was to act on the left of the Mixed Brigade.

At 2 a.m. all was ready; by 8 a.m. Yi-tzu Shan was in Japanese hands, and by 11 a.m. the Sung-shu work had also fallen, the losses incurred by the Japanese 1st Division being but slight. The

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Mixed Brigade had a harder task, but succeeded, by 12.30 p.m., in capturing the eastern line of works, Erh-lung being the last to fall. The forts on the sea front offered little or no resistance, and the Japanese found themselves masters of Port Arthur with a loss of eighteen killed and two hundred and fifty wounded, a fact which may have led them to under-estimate the difficulty of an assault when, ten years later, they attacked in August, 1904. The Chinese fled along the coast; some reached the hills and some escaped in junks from Pigeon and Louisa Bays, but many were shot or bayoneted in the streets, and in all they lost over 1,000 killed.

During the fighting on shore, the Japanese fleet cruised off the port, exchanging shots at long range with the coast batteries, and shelling the fugitives, but taking no active part in the operations.

Japan at once began to administer the district, and by the treaty of Shimonoseki, which was ratified in May, 1895, the whole of Kuan-tung was ceded to her in perpetuity. The later negotiations, as the result of which Port Arthur was eventually leased to Russia, have already been described in Part I of this history. Between the years 1898 and 1903 immense sums of money were spent by Russia in developing her newly acquired territory. On a site hitherto occupied by a few insignificant Chinese fishing villages, the port of Dalny was created. At the close of 1901 the South Manchuria Railway, which connects Port Arthur with the Siberian system, was opened provisionally, and in the spring of 1903 the line began to carry passengers. The Mandarin Road from Chin-chou to Port Arthur was improved, and two excellent roads were constructed from Dalny. Of these two the northern ran via Pan-tao, and the southern via Ho-kou and Huang-ni-chuan; both were metalled, and were zigzagged in places where the gradients would otherwise have been too steep. A telegraph line followed the road via Pan-tao.

Lease to Russia.

Nevertheless, the land defences of Port Arthur were neglected; and at the outbreak of hostilities in 1904 they were far from complete, although the possibility of war with Japan had long been foreseen. During the next few months much was done to make up for the time which had been lost and, by the beginning of June, the fortifications had been very greatly improved.*

* A full description will be found in Chapter XV.

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CHAPTER XIV.

OPERATIONS PRECEDING THE SIEGE. CAPTURE OF THE "POSITION OF THE PASSES." Maps III/1 and III/2.

THE outbreak of war between Russia and Japan was announced at Port Arthur on the night of the 8th–9th February, 1904, by a torpedo attack on the Russian fleet, which was lying in the roadstead. It was followed on the 9th February by a bombardment from the heavy guns of the Japanese fleet. Confusion reigned throughout the fortress. The attack was quite unexpected, the defences were inadequate, and ammunition was lacking for many of the guns in the coast batteries. The Japanese fleet was firing at ranges so great that very few of the Russian guns were capable of making an effective reply, but Batteries 7, 9, Artillery, Golden Hill, Electric Cliff, 17 and 18 came into action. The bombardment was from a southerly and south-easterly direction, shells bursting near Batteries Nos. 9 to Electric Cliff, inclusive. On the Russian side one man was killed and five were injured. In addition to the shots aimed at the batteries, indirect fire was used against the basin and dockyard with the result that many shells burst in the neighbourhood of Quail Hill, and more than one house was set on fire. Hundreds of Chinese fled from the town to the surrounding hills, where many died from cold and exposure.

First naval bombardment.

At this time Admiral Alexeiev, Viceroy of the Far East, was in Port Arthur, with General Stessel as commandant of the fortress. Preparations for defence were begun, and on the 12th February, in pursuance of telegraphic instructions from Russia, the fortress was declared to be in a state of siege. Every man capable of bearing arms was enrolled in the militia, and work on the land defences continued day and night. On the 16th February, General Stessel was appointed to the command of the 3rd Siberian Army Corps, but he delayed his departure and was shortly afterwards made commander of the fortified zone from Chin-chou to Port Arthur. General Smirnov, who at the time was in the north, was appointed commandant of the fortress, but did not arrive until the 17th March.

Telegraphic communication with Chefoo ceased from the 16th February, on which date the cable was cut by the Japanese. Attempts to use wireless telegraphy were unsuccessful.

During the night of the 23rd–24th February, the Japanese made their first attempt to block the entrance to the harbour by sinking ships.

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On the 25th, the Japanese fleet bombarded the fortress for the second time, on this occasion from the eastward. One Chinaman was killed in the Old Town and one Russian sailor was wounded. On the 7th March, a welcome reinforcement appeared in the shape of a third battalion of Fortress Artillery, and on the 8th Admiral Makarov arrived to take command of the Port Arthur fleet.

Second naval bombardment.

A third bombardment was sustained on the 10th March, the Japanese ships manœuvring behind Lao-tieh Shan. Russian observers estimate that a hundred and fifty 12-inch shells fell into the New Town and harbour; some of the warships were hit, and a few people were killed. Although the coast batteries could fire in any direction, they were incapable of inflicting injury on the Japanese vessels, and it was realized that guns must be placed on the Lao-tieh Shan promontory.

Third naval bombardment.

On the 22nd, came a fourth bombardment, again from behind the cover afforded by Lao-tieh Shan. About a hundred heavy shells fell into or near the harbour, one alone, bursting on the Tiger's Tail, killed five men and wounded nine. To check bombardments from this direction the work of building batteries on Lao-tieh Shan was pushed forward.

Fourth naval bombardment.

During the night of the 26th–27th March came a second blocking expedition.

On the 15th April, although the new batteries had been placed in position on Lao-tieh Shan, the fortress sustained a fifth bombardment from the south-west. No damage was done to the Russian ships; but one of the last shells fired burst in the town near Quail Hill, killing seven persons and wounding five, of whom two died. About this time the waters near Pigeon Bay were mined by the Russians.

Fifth naval bombardment.

Meanwhile the Japanese First Army had landed in Korea, and on the 1st May it succeeded in forcing the passage of the River Ya-lu. This success was followed, between 1 a.m. and 3 a.m. on the 3rd May, by the third attempt to block the harbour of Port Arthur, and for some time the Japanese believed that they had been completely successful. They then felt that they would be justified in sending troops to the Kuan-tung Peninsula, and on the 5th May reports reached the fortress of a Japanese landing on the coast some days' march north-east of Chin-chou. On the same day the viceroy left for the north and narrowly escaped capture, for soon after his train had passed the railway was interrupted* and the telegraph line cut by a Japanese raid. The railway was repaired, and on the 10th a train reached Chin-chou with ammunition and

Landing of the Japanese Second Army.

* The Japanese did not wish to damage the line seriously because they hoped to make use of it later. Another account states that they failed to cut the telegraph wires owing to their being made of extra thick steel.

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warlike stores, among which were sixteen machine guns. It was not till the 12th May, when a train from Dalny to the north was forced to return, that Port Arthur was definitely cut off. From this time forward all communication with the outer world had to be effected by sea.*

At a combined council of naval and military officers it was now decided, in view of the weakness of the armament of the land front and of the apparent hopelessness of a sortie by the squadron, to use for the land defences all guns which could be spared from the ships, and to reinforce the personnel of the fortress artillery with seamen gunners. Meanwhile General Smirnov, as commandant of the fortress, was strengthening the land defences, and General Stessel, as commander of the fortified zone, was making arrangements to check any attempt of the Japanese to advance past Chin-chou. To this end the position of Nan Shan, on the isthmus south of Chin-chou, had already been fortified, and was now considerably strengthened.† It was, however, too late to remove the useless mouths from Port Arthur, but the fortress was unusually fortunate in this respect. Many of the civilian inhabitants had left as opportunities offered, and when the peninsula was cut off the European residents, in Port Arthur and Dalny together, numbered only about six thousand. The Chinese inhabitants were more numerous, but they were of great value as labourers on the fortifications.

Naval guns to be mounted on the land front.

Civilians in the fortress.

The inhabitants of Dalny were assured that the Japanese could not possibly pass the isthmus, and that everyone might therefore remain in the town, but on the 26th May came the news of the Russian defeat at Nan Shan and, at 11 p.m. on that date, they were ordered to leave at once for Port Arthur. The railway being needed for the transport of the wounded, the greater part of the population was forced to walk the whole distance, taking with them only what they could carry. Attempts were hurriedly made to destroy the wharves, dock, railway, etc., but when the Japanese occupied the town they found that as soon as the harbour could be cleared of mines it would furnish an excellent base for further operations against Port Arthur.

Evacuation of Dalny.

It was now obvious that the fortress must before long be closely besieged, and the presence of both General Stessel and General Smirnov could not fail to lead to friction, since it would be impossible to define the duties of each. General Smirnov was commandant, but on the other hand General Stessel was the senior. The Russian commander-in-chief, General Kuropatkin, realized the situation and sent an order by sea to General Stessel, to the effect that he should leave the fortress in a destroyer. The order was duly delivered to General Stessel, who, however, sup-

Divided control by Generals Stessel and Smirnov.

* A list of the Russian troops at this time in the Kuan-tung Peninsula will be found in Appendix C.

† See Part II of this history, p. 17.

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pressed it and remained in Port Arthur, an action which formed one count in the indictment at his subsequent court-martial.*

After the battle of Nan Shan the 1st and 3rd Japanese Divisions advanced southward. The 3rd Division was on the left, and a detachment of the 1st Brigade, 1st Division, occupied Ta-lien-wan on the 27th May, and Dalny on the 29th. The remainder of the force began entrenching itself on the heights east of Pei-pao-tzu-yai. The 11th Division had meanwhile disembarked in Yen-tai Bay, some eighteen miles north-east of Chin-chou, whence it marched to relieve the 3rd Division, which then moved northward to form the right wing of the Second Army. General Nogi, with the Head-Quarters of the newly formed Third Army, arrived at Chin-chou on the 5th June, and at once assumed direction of the operations in the Kuan-tung Peninsula.

Japanese movements after Nan Shan.

Arrival of the Japanese Third Army Head-Quarters, and of 11th Division.

As the Russian garrison of Port Arthur was known to be at least equal in strength to the Third Army, the Japanese took every precaution against counter-attack. The Russians had established an observation post on the summit of Chien Shan,† whence they noted the departure of the 3rd Division, while their scouts brought in the news that some of the Japanese trenches were unoccupied at night. Nevertheless they do not seem to have realized the weakness of the investing force, and many of their officers were even surprised that the Japanese did not pursue as far as Port Arthur immediately after the battle of Nan Shan.

On the 30th May, the Japanese occupied a line from An-tzu Shan to Ta-tzu Shan. On the left, the 11th Division had advanced along the main Ho-kou road to a point some five miles west of Dalny, and had taken up a defensive position on a line of low foot-hills. The 22nd Brigade of this division had one regiment on each side of the road, the 12th to the south and the 43rd to the north; the 12th Regiment had all three battalions in the front line, the 43rd had one battalion in front and two in support. Two mountain batteries with this brigade were placed, one on a knoll north-west of Ta-tzu Shan, the other immediately north of the main road, and south-east of height 892. The rest of the divisional artillery was further to the rear. Both the knoll and height 892 were provided with shelter pits and splinter-proof cover. Along the hills immediately to their front ran trenches so traced as to command the approaches from the valleys; on a spur of height 892 a closed work was placed, and the front was covered by wire entanglements. The 10th Brigade of the 11th Division moved on Li-chia-tun, and occupied the heights south-east of that place. On the northern slopes of these hills the ground was so steep that water for the

Situation at the beginning of June.‡

* See Appendix H.

† Sometimes less correctly called Ken Shan.

‡ For the situation of the field armies at the beginning of June see Strategical Map 2.

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troops had to be carried up by hand. Further north was the 1st Division, and Third Army Head-Quarters were now at Pei-pao-tzu-yai.

At this date, the Russians were holding a line which ran from Shuang-tai-kou, on the north, to Yu-pi-la-tzu. There it turned back sharply to height 1154, whence it followed the crest of the hills almost as far south as the village of Hou-chia-tun; then, taking a turn to the south-east, it included Lao-tso Shan, called by the Russians the Green Hills, and eventually reached the sea opposite Lung-wang-tang. In front of this line, which was known as the "position of the passes," the mounted detachments and outposts were pushed forward to Chien-mu-jih, Pan-tao, Lan-ni-chiao, Ta-shih-tung, and Wai-tou Shan; while the conspicuous peak of Chien Shan was held as an advanced post by the 10th Company of the 14th East Siberian Rifle Regiment with two 2·5-inch guns.*

Towards the end of June, when Ta-lien Bay had been practically cleared of mines, the 1st *Kobi* Brigade landed at Dalny and was placed under the orders of the commander of the 1st Division; a naval brigade was also added to General Nogi's forces. It was therefore determined to dislodge the Russians from their observation post on Chien Shan, which overlooked Dalny and made it difficult to conceal the movements of Japanese troops.

Operations of the 25th and 26th June, 1904.

On the night of the 25th–26th June, three columns were formed from the 11th Division. The right column was to advance in the direction of Lan-ni-chiao, and the centre on to Liang-shui-ho and Chu-chuang-tzu-kou, while the left moved along the Dalny—Ho-kou—Huang-ni-chuan road. The bulk of the division, and its Head-Quarters, were with the centre column. It so happened that the Russian commander had also selected this moment to send out a reconnaissance, and shortly before sunrise the Japanese advanced guards struck his leading patrols. Pushing forward in the darkness they drove the Russians back towards height 899 in the south, while to the north the right column captured the heights a thousand yards east of Lan-ni-chiao without difficulty.

The Russians, finding their retreat threatened, now evacuated Wai-tou Shan, and between 9 and 10 a.m. the 11th Japanese Division was on the line Shuang-ting Shan—Han-chia-tun, where it came into touch with the left of the 1st Division.

The "position of the passes" could now be clearly distinguished, and in face of the 1st Division the hills west and north-west of Pan-tao were seen to be strongly held, but for the present their capture formed no part of the Japanese programme.

For the actual attack on Chien Shan the troops of the 11th Division assembled at Chu-chuang-tzu-kou, where three columns were again formed. A portion of the 22nd Brigade, with part of the divisional artillery, formed the right column,

* Also known as "Baranovski" guns.

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which was to attack the Russians near Lan-ni-chiao; the 43rd Regiment and one mountain battery formed the centre column, and the 12th Regiment with the rest of the artillery was on the left. The centre column was to advance directly against the peak, and the left column on to the ridge south of it. To support the movement a Japanese cruiser and some destroyers moved along the coast.

The Russian warships had already several times interfered with the Japanese left, and at this juncture a force consisting of the *Novik*, *Otvazhni*, *Gremyaschi*, *Bobr*, and *Vsadnik*, with fourteen destroyers, appeared off Hsiao-ping-tao, and opened fire. These vessels were joined later by the *Pallada* and *Diana*, but, as on other occasions, there was no systematic co-operation between the Russian army and navy, and the best results were not obtained from the fire of the ships. The danger of mines near the coast prevented the Japanese ships from closing, and the number of shell craters on the hill-sides proved that the Russian fire must have been severe while it lasted.

About 12.30 p.m., the 43rd Regiment began its advance, with nearly all its men in the front line. As the regiment climbed the slopes some fougasses exploded, but hurt nobody. Russian field artillery was firing from positions west of Chien Shan, and some machine guns were posted on the peak itself. The commander of the Japanese mountain battery, which accompanied the advanced guard of the centre column, succeeded in bringing his guns into action on a knoll some three thousand yards south-east of Chien Shan, and between 3 and 4 p.m. two batteries belonging to the right column opened fire from a point south of Lan-ni-chiao. These three batteries concentrated their fire on the small garrison, which abandoned the two guns and retired to the main position without offering any very strenuous resistance; by 5.30 p.m. the hill was in Japanese hands.

During the day the 11th Japanese Division suffered a loss of four officers and one hundred and fifty-four men; the 1st Division on the right merely moved forward and engaged in a few insignificant skirmishes near Pan-tao.

After the loss of their post of observation the Russians withdrew the right of their defensive line to the west of the Lung-wang-tang Inlet, but in other respects the "position of the passes" remained unchanged. The Japanese 11th Division occupied Lan-ni-chiao with one regiment of its right brigade; the other regiment held the captured hill. Of the left brigade one battalion, and later one regiment, held the entrance to the valley at Ta-shih-tung; the rest of the brigade occupied Shuang-ting Shan, which had been captured by the 12th Regiment on the 26th after a slight skirmish.

Russian attempt to retake Chien Shan, 3rd to 5th July.

At the beginning of July, realizing too late the value of the position that had been lost, General Stessel determined to retake Chien Shan; but his intention was known throughout the fortress and, when so many shared the secret, it is more than probable that some intimation of it filtered through to the Japanese outposts.

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The movement was begun on the night of the 2nd–3rd July, by the troops of the 7th Division under Colonel Semenov. Under cover of darkness a party of scouts made their way down to the Lung-wang-tang Valley and climbed the opposite slopes. The Japanese outposts retired, and on being reinforced by three companies of infantry the Russian scouts reoccupied the position on Ta-po Shan which had been abandoned five days earlier. For some hours Colonel Semenov hesitated to extend his right across the Dalny road, in case a counter-attack should force him to retire, but at 1.30 p.m. he felt that his position was secure and he then sent part of his force to Lao-tso Shan. At 4 p.m., he began to move in a north-easterly direction but soon came under heavy artillery fire from Chien Shan and, about the same time, an attempt to push further eastward was checked by Japanese guns on Shuang-ting Shan. General Stessel had been kept informed of the progress of the fighting, and about midday had advised General Fock to assist Colonel Semenov by demonstrating against Chien Shan from other parts of the line. A few hours later he himself arrived on the scene and at once decided to deliver a general attack.

In accordance with his orders, scout detachments amounting to about three hundred and sixty men, accompanied by eight sappers carrying explosives, were to assemble at dusk on height 990 under the command of Lieutenant Yasevich; thence they were to advance to the attack supported by the 9th and 10th Companies of the 14th East Siberian Rifle Regiment. Two battalions of the 14th Regiment were to take the hills to the north, near Nan-cha-kou, and demonstrations were to be made by the 15th and 16th Regiments along the An-tzu Ling—Dalny road against the Japanese centre. About midnight the scouts reached the foot of Chien Shan, with the 9th and 10th Companies of the 14th Regiment in echelon on the right. The lowest tier of Japanese trenches was reached and found unoccupied, and the scouts were hardly more than one hundred and fifty yards from the crest when a cry was heard on their right, where the 9th Company had suddenly come upon a sentry. The assailants now dashed forward, but the alarm had been given, and they were met by heavy rifle and artillery fire and compelled to lie down within fifty yards of a Japanese breastwork which crowned the height. Numerous attempts were made to rush the defences, and it is said that on more than one occasion the Russian soldiers seized the Japanese machine guns and strove to tear them from their emplacements. A Japanese counter-attack was beaten off without much difficulty, but no impression was made on the defence even when the secondary attack on the left succeeded in occupying the Nan-cha-kou hills, where the 14th Regiment met with very slight opposition. The demonstrations further to the north do not appear to have been pressed or to have exercised any influence upon the general situation.

A little before daylight on the 4th, the frontal attack was withdrawn and General Fock then ordered two battalions of the 13th Regiment to advance from the direction of Ta-shih-tung, but they were easily stopped by shrapnel fire from Chien Shan.

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Russian artillery replied from the neighbourhood of Hou-chia-tun, and a furious duel ensued. The Russians claim to have silenced the hostile guns, but the companies of the 13th Regiment were still unable to advance. About 3 p.m., four guns were brought to Ta-shih-tung whence they opened upon Chien Shan,* but the Japanese brought up reserves, and five batteries of newly arrived heavy artillery, with some naval guns, came into action north-east of Huang-ni-chuan. The defence was now too strong to be shaken and when darkness fell, about 8 p.m., General Stessel ordered the attack to cease. During the night the Russians fell back to their old line which, with the exception of the loss of Chien Shan, was practically identical with that occupied since the evacuation of Dalny; for Ta-po Shan and Lao-tso Shan were again in their hands.† North of Cha-kou, heights 1100 and 800, were strongly held as advanced positions, while height 584 was occupied by a weak outpost. A line of works ran from sea to sea, with as many as four tiers of trenches on some of the more prominent hills.

From the 5th to the 26th July, only minor engagements took place; the Russians, in fact, had received orders not to engage too closely, and their patrols did not risk serious collisions. On the 12th and 17th, however, they made small counter-attacks, which were repulsed.

Meanwhile the following reinforcements for the Third Army were landed at Dalny.

Arrival of Japanese 9th Division and siege artillery.

The 4th *Kobi* Brigade, which was kept directly under the army commander.

The 2nd Field Artillery Brigade of 72 guns.

A number of 4·7-in. howitzers, 4·7-in. bronze guns, 4·7-in. and 12-pr naval guns, and 3·5-in. mortars. Some of this heavy artillery was used in the fighting on the 4th July.

The 9th Division, of which, however, the latest detachments did not reach the front until the 29th July.

* All these assaults on Chien Shan were supported by the fleet, the vessels usually detailed being the *Otvázhni*, *Gremyaschi*, *Bobr*, *Novik*, and *Vsadnik* with about twelve destroyers.

† Losses on the 3rd and 4th July :—

Russians.	Killed.		Wounded.	
	Officers.	Men.	Officers.	Men.
4th Division	1	50	3	254
7th Division	1	40	4	248

On the side of the defence the heaviest fighting was again borne by the Japanese 11th Division, which lost 9 officers and 199 men.

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During this period the Japanese also brought up twelve Russian field guns captured at Nan Shan, and placed them east of Lan-ni-chiao. Six naval guns were placed some 1,600 yards west of Chu-chuang-tzu-kou.

Fighting on the 26th July.

General Nogi now felt that he had sufficient force under his command to undertake the operations which were designed to push the Russians back into the permanent defences of Port Arthur, and on the 26th July he disposed his troops as follows :—

Right Wing.—The 1st Division and 2nd Field Artillery Brigade.

Centre.—The greater part of the 9th Division, reinforced by the 4th *Kobi* Brigade, three heavy batteries, and the captured Russian field guns.

Left Wing.—The 11th Division and two heavy batteries.

As a general reserve the 1st *Kobi* Brigade was stationed at Wang-chia-tun, in rear of the Japanese right, where the ground was open, and a counter-attack was to be apprehended.

The 1st Division was divided into two columns; the right column was to advance along the main Wang-chia-tun—Ying-cheng-tzu road, height 584 being its first objective, while the left column was to move against the same line of heights from a more southerly direction. To support the advance of this division, the four 4·7-in. howitzers and six 3·5-in. mortars were placed a little to the north of the road junction just east of Cha-kou.

The 9th Division, in the Japanese centre, which was to attack the loftiest heights, was divided into two columns. The 18th Brigade, on the right, was directed against height 1120, while the 6th Brigade, on the left, was to attack 990. The 11th Division, which had gradually been moved southward as the 9th arrived, was also formed in two columns. The right column was to move west from the southern spurs of Chien Shan, across the valley, to the long ridge south of height 990. It consisted of the 10th Brigade, with the 44th Regiment on the right and the 22nd on the left, and was accompanied by five out of the six divisional mountain batteries, six 4·7-inch bronze guns, twelve 3·5-inch mortars, and ten naval guns; the mountain batteries came into action from a narrow ridge four thousand yards east of Ta-shih-tung. The left column, consisting of four battalions of the 22nd Brigade with a mountain battery, moved against one of the lower spurs of Ta-po Shan. Two battalions of the 22nd Brigade remained in reserve with the duty of observing the extreme Russian right. General Nogi watched the operations on the right and centre from height 325 north of Pan-tao.

To resist the impending attack, General Fock had distributed the troops under his command in three sections and a reserve as follows :—

Left section, from Shuang-tai-kou to height 970, under Major-General Nadyein.

15th East Siberian Rifle Regiment, 11 companies.
16th East Siberian Rifle Regiment, 11 companies.
¾ 4th Squadron Verkhne-Udinsk Cossack Regiment.

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3 Mounted Scout Detachments from the 5th, 15th, and 16th East Siberian Rifle Regiments.
1 Detachment Infantry Scouts of the 15th East Siberian Rifle Regiment.
2nd and 3rd Batteries of 4th East Siberian Rifle Artillery Brigade.

Centre section, from height 970 via Yu-pi-la-tzu, An-tzu Ling, height 990 to a nameless village one mile north of Hou-chia-tun, under Colonel Savitzki. This portion of the defence was divided into two sub-sections.

(*a*) From height 970 to Yu-pi-la-tzu, under Lieutenant-Colonel Gusakov.
14th East Siberian Rifle Regiment, 2 companies.
15th East Siberian Rifle Regiment 2 infantry scout detachments.
16th East Siberian Rifle Regiment, 3 infantry scout detachments.
4 Q.F. guns under Captain Schwindt.
2 guns of the 1st Battery of 4th East Siberian Rifle Artillery Brigade.
4 mountain and 5 machine guns.

(*b*) From Yu-pi-la-tzu to the nameless village, under a commander nominated by Colonel Savitzki.
13th East Siberian Rifle Regiment, 3 infantry scout detachments, and 1 mixed detachment.
14th East Siberian Rifle Regiment, 9 companies, 1 mounted scout detachment, 3 infantry scout scout detachments, and 1 mixed detachment.
½ 1st Battery 7th East Siberian Rifle Artillery Brigade, 4 guns.
¾ 1st Battery 4th East Siberian Rifle Artillery Brigade, 6 guns.
6 machine guns.

Right section, from the nameless village to Ta-po Shan and Lao-tso Shan, under Colonel Semenov. This portion of the defence was also divided into two sub-sections.

(*a*) Hou-chia-tun section as far as height 640 exclusive, under Colonel Dunin.
13th East Siberian Rifle Regiment, 4 companies.
5th East Siberian Rifle Regiment, 3 companies and 2 scout detachments.
4 Q.F. guns under Captain Pusanov, to fire down the Lung-wang-tang valley.

(*b*) Lung-wang-tang section, under a commander nominated by Colonel Semenov.
26th East Siberian Rifle Regiment, 2 companies.
28th East Siberian Rifle Regiment, 8 companies.
3rd and 7th Reserve Battalion, 4 companies.
Frontier Guards 2 companies.
4 Scout Detachments from the 7th East Siberian Rifle Division.

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2nd and 3rd Batteries of the 7th East Siberian Rifle Artillery Brigade.
1 Battery Horse Artillery.
¼ 4th Squadron Verkhne-Udinsk Cossack Regiment.
19 machine guns.

General reserve, at the road junction 1½ miles south of Lieh-shu-fang.
5th East Siberian Rifle Regiment, 4 companies.
13th East Siberian Rifle Regiment, 7 companies.
4th Reserve Battalion.
4th Battery of the 4th East Siberian Rifle Artillery Brigade.

In all, 17¾ battalions and twenty-two scout detachments, or 19,000 to 20,000 bayonets, 1 squadron, 70 guns, of which 52 were quick-firers,* and 30 machine guns.

At 7.30 a.m. on the 26th July, the attack began, but all movements were greatly impeded by a thick fog, which later in the day turned to heavy rain. In the south, the 11th Division was opposed by the troops of the 7th East Siberian Rifle Division, which were commanded by Colonel Semenov until General Kondratenko arrived from Port Arthur and assumed the direction of affairs in this quarter. The Japanese came on with such resolution that the pass between Lao-tso Shan and Ta-po Shan was soon captured and the height 764 fell into their hands. This loss rendered the position of the Russian right extremely precarious—for the only line of retreat lay round the head of the Lung-wang-tang Inlet—and General Kondratenko decided that the hill must be retaken. All the guns and howitzers which could be spared were therefore concentrated against it, and about 5 p.m. the Russian infantrymen succeeded in establishing themselves on the slopes, but a redoubt at the top was successfully held against them. The left of the 7th Division troops on Ta-po Shan was heavily shelled by the Japanese and from 3.30 to 6.30 p.m. was subjected to a series of attacks, all of which were beaten back by rifle, machine gun, and artillery fire, and failed to get nearer than seven or eight hundred yards from the Russian line.

In the centre, the left column of the Japanese 9th Division advanced against heights 990 and 1,100 after a heavy artillery bombardment, and at one time nearly succeeded in reaching the crest of the former hill; but here the fighting consisted for the greater part of the day of an artillery duel, while the main efforts of the Japanese were directed against the Yu-pi-la-tzu salient, which was assailed from the north by the 1st Division and from the south by the right column of the 9th Division. As had been the case elsewhere, the turning movement of the 1st Japanese Division was greatly delayed by the fog, and it was not until 8 a.m. that the outpost on height 594 was driven back to the main position. The Japanese then pushed on towards height 800, which was held by

* These guns were the 1900 model, see Part I of this history, p. 30. Their rate of fire was in no way comparable to that of modern Q.F. guns.

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the 1st Scout Detachment of the 16th East Siberian Rifle Regiment with one machine gun under Second-Lieutenant Burnevich. While attacking this second hill the Japanese were taken in flank by the fire of another scout detachment from height 790, but at midday the Russian machine gun was disabled and about an hour later Lieutenant Burnevich's detachment fell back after losing half its numbers.

While the attack on height 800 was in progress the right column of the 9th Division advanced from the middle road towards Yu-pi-la-tzu, but was beaten back about 11.30 a.m. by rifle and artillery fire from both that hill and from the An-tzu Ling. The attack was pressed with great vigour, and at noon General Fock ordered two companies of the 3rd Battalion of the 13th Regiment to Yu-pi-la-tzu and placed the other two companies on the An-tzu Ling. As soon as Lieutenant Burnevich was driven in the danger increased, for the Japanese 1st Division was then able to advance due south against the salient, and against the height 790; but in neither case did it succeed in getting within a thousand yards of the position. For a time the pressure was relaxed, but about 3 p.m. some Japanese ships joined in the bombardment from Ying-cheng-tzu Bay, and the defences of Yu-pi-la-tzu and height 790 suffered severely, although the actual number of casualties caused is said to have been slight. Towards evening the fire of the Japanese artillery became heavier than ever, and at 7 p.m. the infantry of the 1st and 9th Divisions was again sent forward to the assault of the line of heights from 790 to Triple Peak. In some places the Japanese succeeded in reaching the trenches but were at last beaten off, and when night fell the greater part of the 1st Division had been brought to a standstill at the foot of the precipitous spurs of Yu-pi-la-tzu. There, intermingled with parties from the 9th Division, the men remained throughout a cold and rainy night until the coming dawn enabled them to renew the attack.

As the result of the day's fighting the only real success gained by the Japanese was the capture of the height 764 and the pass between Lao-tso Shan and Ta-po Shan. In spite of the heavy cannonade to which the Russians had been subjected their losses did not exceed 350 men, and General Stessel decided to continue the resistance on the following day. His only reserves now consisted of three companies of the 13th East Siberian Rifle Regiment and the 4th Reserve Battalion; for nine companies of the 5th East Siberian Rifle Regiment, two of which had been called up from Port Arthur, had been absorbed in the fighting line. Of this regiment the 5th and 6th Companies* had joined General Kondratenko, who had also summoned from the fortress several companies of his own 7th Division, and a company of marines.

The night passed quietly on the centre and left of the Russian position, but on the right the Japanese regained complete

* The positions allotted to the other companies of this regiment are not known, but the 2nd, 3rd and 4th Companies and the 1st Scout Detachment were brought to An-tzu Ling village just west of the pass about 5.30 p.m.

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The Japanese attacks on the 27th.

possession of height 764. At daylight, artillery fire opened along the whole front. About 9 a.m., this bombardment was followed by an infantry attack on Ta-po Shan, but owing to the accurate shooting of the Russian batteries posted west of Lung-wang-tang, the Japanese were stopped when about five hundred yards from the trenches. Towards noon the attack was suspended while the troops rested and had a meal, but an hour and a half later the Japanese artillery again burst forth, and fire was concentrated on the batteries which had checked the advance in the morning. The infantry attacks were then resumed, but during the afternoon the defence was greatly assisted by the ships, and the commander of the 11th Japanese Division decided that night would bring him better chances of success.

To the north the Japanese did not attempt any offensive movements against the Russian left, but contented themselves with massing about eighty guns near the village of Ying-cheng-tzu, and pounding the entire front of the position between Yu-pi-la-tzu and height 790, which was held by scout detachments. At 10 a.m., the ships in the bay joined in the bombardment, but it was not until midday that the Russian advanced post was driven back to height 970. Even then the Japanese infantry could not establish themselves on the abandoned peak, for it was thoroughly searched by shrapnel fire from a battery in rear. A general assault was now delivered against the whole front of the Yu-pi-la-tzu salient. About 3 p.m., the defenders of height 970 began to waver, but the line was restored by the timely arrival of two companies of the 15th Regiment. At the apex of the salient the fighting was even more determined, and at one time the Japanese infantry forced a way right up to the trenches occupied by the scouts of the 13th Regiment, but were beaten off by some companies of the 16th Regiment which were brought up at the critical moment. The defenders at this point suffered a loss of over two hundred men but refused to give way, and when other means failed they had recourse to stone throwing. The last assault of the day was delivered at 9 p.m., and on this occasion the assailants entered the redoubt only to be driven out at the point of the bayonet. In time even Japanese infantry will succumb to fatigue, and with this last repulse the attacks on Yu-pi-la-tzu and Triple Peak came to an end. When the fighting ceased, the Russian losses already amounted to over a thousand killed and wounded, but General Stessel again decided that the resistance should be continued. Such men as were available were at once set to work to repair the shattered defences of Yu-pi-la-tzu and, after issuing an order praising the conduct of all ranks during the last two days, General Stessel returned to the fortress.

The "position of the passes," though weakened by the loss of height 790, still barred the way to Port Arthur, but General Nogi was not yet at the end of his resources. His attacks in the centre had failed, but during the night the Russian right flank was deprived of the support of the fleet, and within an hour of the last repulse

The capture of Ta-po Shan.

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from Yu-pi-la-tzu a desperate attack was launched against Ta-po Shan. At last success crowned the Japanese efforts, and the Russian line was broken. A counter-attack failed, and at 11 p.m. Colonel Semenov decided to retire to the western side of the inlet; but at this moment General Kondratenko arrived upon the scene and ordered him to make another effort to recover the lost trenches. The second attack was no more successful than the first, but it was not until 3.30 a.m. on the 28th that General Kondratenko at last consented to withdraw. In the meantime he visited Lao-tso Shan, where two companies of the Japanese 12th Regiment had worked their way completely round the Russian right. Finding their flank turned and the centre of their line broken, the troops of the 7th Division retired from Lao-tso Shan covered by the Frontier Guard, but many of them were compelled to swim across the bay.*

Throughout the night, communication between the various Russian commanders was very irregular, particularly while General Kondratenko was on Lao-tso Shan, and contradictory reports were constantly reaching General Stessel. As early as 10.30 p.m. General Fock sent word to say that retreat to Feng-huang Shan† was inevitable, since any further advance of the enemy towards Hou-chia-tun would jeopardize the whole line. For a time, however, the troops of the 4th Division were able to remain on the passes, but at 2 a.m. General Fock received permission to retire to Feng-huang Shan as soon as he was convinced that his right flank had been driven in. At 4 a.m., he received General Kondratenko's message announcing the withdrawal from Lao-tso Shan, and orders were at once issued for the retreat.

The retreat from the passes.

At dawn on the 28th, the troops of the 4th Division began to evacuate their positions. The defenders of height 990 fell back by Hou-chia-tun covered by three companies of the 13th Regiment. The artillery and train suffered heavily from Japanese guns posted on the captured heights, but there was no pursuit. In the centre the retreat from the An-tzu Ling and Yu-pi-la-tzu was effected in good order; on the left flank the Russians were exposed to a galling fire from the Japanese batteries near Ying-cheng-tzu. In this quarter the retreat was greatly assisted by the fire of the 2nd Battery of the 4th Artillery Brigade, which checked the advance of the Japanese 1st Division until it was supported by its own guns. By 9 a.m., the Japanese were in possession of the heights, and three hours later, while General Stessel held a ceremonial march past of his troops, they were established on a line from Chang-ling-tzu in the north to Lung-wang-tang in the south.

The Russians now fell back to their last line of defence outside the permanent fortifications. This line ran along the

* One account says that they escaped in Chinese junks.

† Also called the Wolf Hills, by which name these heights are perhaps better known. The Chinese names have, however, been adhered to as far as possible.

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heights from Louisa Bay, eastward to Feng-huang Shan, thence south to Ta-ku Shan and Hsiao-ku Shan. It had been very weakly fortified, the trenches being quite devoid of overhead cover, while the *kao-liang*, or tall millet, had been left uncut so that the plain from Hou-sha-pao to Lieh-shu-fang, instead of forming an excellent glacis, allowed the Japanese to approach unseen to within a few yards of the Russian lines. The work of strengthening the defences was at once begun, and it was hoped that the Japanese would halt for some time, as had hitherto been the case after each advance. This hope was disappointed, for they followed up their success without any delay, and at daylight on the 30th an assault was launched from the north.

Capture of Feng-huang Shan 30th July.

The Japanese heavy artillery marched at 11 p.m. on the 29th, and by 2 a.m. on the 30th had reached a point near the railway two thousand yards south-west of Chang-ling-tzu. On the right of the army was the 1st Division, again strengthened by the 1st *Kobi* Brigade. The left brigade of this division passed through Tu-cheng-tzu and, taking advantage of the cover afforded by the *kao-liang*, captured Feng-huang Shan and the neighbouring heights almost without loss. A little further to the east the 9th Division had to cross a stretch of open ground where it suffered slightly from the fire of the Russian artillery. On the extreme left the 11th Division was not closely engaged.

With the capture of Feng-huang Shan the Russian resistance collapsed, and the whole line was evacuated with the exception of Ta-ku Shan and Hsiao-ku Shan; the retreating troops suffered severely from the Japanese artillery, since no arrangements had been made for using the fortress guns to cover a retirement. The attack, indeed, came as a surprise, the Japanese finding the arms of some units still piled, and capturing quantities of supplies and cooking utensils. The Russians fell back to the permanent defences, and by the evening of the 31st July the Japanese were firmly entrenched on the captured heights whence they could overlook the fortifications of Port Arthur. Their casualties, from the 26th to 31st July inclusive, amounted to 139 officers and 3,931 men.

From this time onwards the defence became entirely passive, no sortie being made in sufficient strength to interfere with the designs of the Japanese, who were thus allowed a free hand in all matters. Their information about the Russian works, however, proved to be both insufficient and inaccurate, their experience in 1894 having led them greatly to under-estimate the value of permanent fortifications.

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CHAPTER XV.

The Defences of Port Arthur. Maps III/2, III/3, and III/4.

When war broke out between Russia and Japan the coast defences of Port Arthur, although far from complete, proved sufficient to deter the Japanese fleet from engaging them in a duel. Twenty-one batteries were in existence.* Of these Nos. 2, 6, 7, 9, 13 (Golden Hill), 15 (Electric Cliff), 16, 19, and 21, were permanent concrete structures. The others were almost without exception old Chinese earth batteries of which the armament had been reorganized. Among these earthen batteries No. 11 was never armed, but another work, Artillery Battery, was built on the Tiger's Tail, bringing the total number of batteries to twenty. No. 19 Battery fired towards Hsiao-ku Shan and Takhe Bay. Its armament was removed, and was re-emplaced in No. 22, a sand-bag battery facing south-east. After the Japanese fleet had bombarded the town and harbour from the neighbourhood of Pigeon Bay, guns were mounted on Lao-tieh Shan, but no artillery was in position on that mountain at the outbreak of war. The five 10-inch guns in the Electric Cliff Battery, and all the 6-inch Canet guns, were modern weapons, and the howitzers in the permanent batteries would no doubt have proved effective had the Japanese fleet come within range. But the mountings of those pieces which were in the earth batteries were so defective that accuracy of fire was out of the question, and it was therefore on the permanent batteries that the defence had principally to rely. Very few naval guns were used for the armament of the coast defences.

Coast Defences.

The general principle of the construction of the coast batteries was the same throughout. Each piece was mounted in an emplacement large enough to admit of all-round fire, so that the coast armament could assist in the land defence. Between the emplacements were heavy traverses in which were situated the magazines, shell stores, and shelters for the detachments. The only serious damage sustained from the fire of the Japanese fleet was received by Golden Hill Battery, where a 12-inch shell struck the superior slope, some ten feet in front of the concrete protecting a shell store. The shock was partly absorbed by

* The armament of the various works can be seen from Map III/3. Battery No. 11 is not shown.

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the earth of the slope, and the shell failed to penetrate the four and a half feet of concrete forming the front wall, but it cracked the material to such an extent that the steel rail of the travelling pulley, used for moving shells inside the store, was torn from its fastenings. This was the only instance of an effective hit on a battery during a naval bombardment. A boom was constructed outside the mouth of the harbour as a protection against torpedo attacks, but there was no great number of light quick-firing pieces. The positions of the searchlights can be seen from Map III/2, but some of them were removed before the end of the siege, and were mounted on the land front.

Land Defences.

A modern fortress consists of a girdle of detached *storm-proof** works, surrounding the place which it is required to defend; the girdle must be far enough out to prevent a besieger from mounting guns and bombarding the heart of the fortress. The works forming the girdle are connected with one another by entrenchments of the usual types found in field fortification, but of sufficient strength to ensure that the assailants shall not break through without having recourse to a regular siege. The spaces between the works are called the *intervals*. Although under certain conditions heavy guns may be mounted in the forts, most of the fortress artillery is placed in batteries either in the intervals or echelonned in rear.

Alternative lines of defence.

From Map III/2 it will be seen that there are two possible lines for the defence of the land front of Port Arthur. One runs from north of Louisa Bay to Feng-huang Shan, thence turning southward and finishing at Hsiao-ku Shan. From Eight Ships' Bay to Chou-chia-tun this line has in front of it low ground forming an admirable glacis, but from Chou-chia-tun to the sea it is faced by hills of equal height. If occupied it would absolutely guarantee the harbour against bombardment from the land side. The length of this line from Louisa Bay to Takhe Bay is a little over twelve miles. The alternative scheme is to fortify the heights which surround the harbour and town, and extend in the north-west almost to Louisa Bay. The low ground running from Louisa Bay to Takhe Bay acts as a glacis to the line, which is about eleven miles long.

It was this second scheme which was adopted by the Russians. Had the extreme range of artillery been from six to seven thousand yards, the fortification of this inner line of heights would have rendered the port secure against bombardment from pieces concealed in the Feng-huang Shan hills, but when opposed to artillery of which the range was from ten to twelve

* A work is considered storm-proof when its design is such that no matter how great the determination of the assailants may be, they can be destroyed as fast as they can advance to the attack. A ditch flanked by machine guns, as in the case of the forts described in Chapters XXII, XXIII, and XXIV, will render a work storm-proof until the flanking defences have been destroyed.

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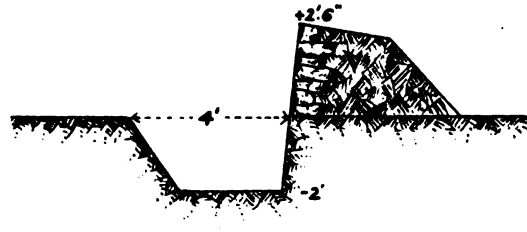
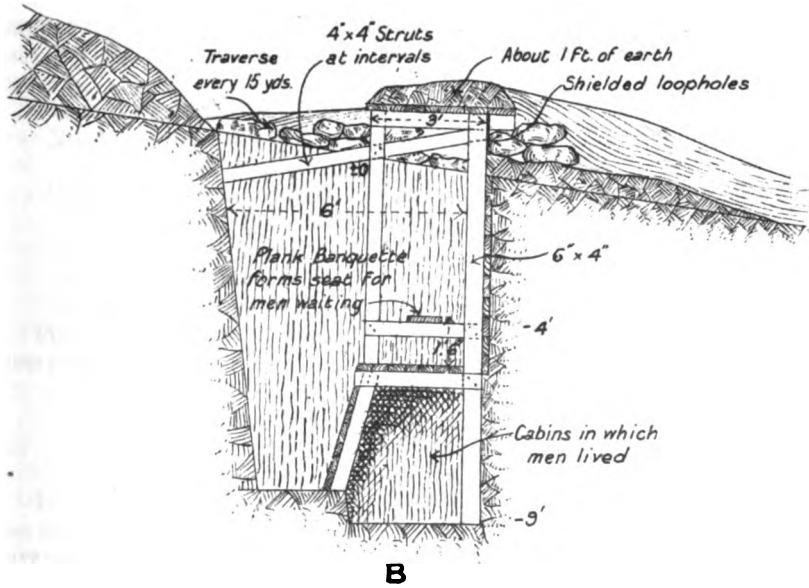
RUSSIAN TRENCHES.



A

ORIGINAL TYPE OF TRENCH



B

CHI-KUAN BATTERY, LOWER TRENCH

Scale 5 feet - 1 inch

0 1 2 3 4 5 10 Ft.

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thousand yards, the line of fortifications proved itself to be no protection.

Soon after they had taken possession of the fortress the Russians began to build permanent fortifications in a semi-circle. Six forts were designed as follows:—

No. 1. Fort Pai-yin.
No. 2. Fort Chi-kuan.
No. 3. Fort Erh-lung.
No. 4. Fort Yi-tzu Shan.
No. 5. Fort Ta-yang-kou North.
No. 6. A fort which was to have been placed 3,500 yards south of Fort Cha-kua-tzu.

It was soon realized that owing to the broken character of the country adjoining forts would not be able to see each other, and much dead ground would be left between them. Other works were therefore designed in order to fill the intervals, and since the forts were already numbered in series, the new defences were called either "fortifications" or "intermediate works," and were given numbers similar to those in the girdle first designed. The result was a most misleading nomenclature; for example, Fort No. 3 and Fortification No. 3 were side by side, and were equally permanent forts. Fort No. 5 was never finished, whereas its neighbour Fortification No. 5, was a permanent work complete in all respects.

The intermediate defences were:—

No. 1. A work which was intended to crown the height 700 yards south-west of Pai-yin Battery.
No. 2. A work to occupy the site of Chi-kuan South-East, an old Chinese redoubt.
No. 3. Fort Sung-shu.
No. 4. Fort Ta-an-tzu Shan.
No. 5. Fort Cha-kua-tzu.

Permanent concrete batteries were designed for some of the intervals, as follows:—

A. Pai-yin North.
B. Chi-kuan.
C. An-tzu Shan East.
D. Ta-yang-kou South.

In addition to the fortifications on the heights an inner *enceinte* was provided, which consisted of a heavy earthen parapet, with a ditch twenty feet wide and twenty feet deep, and had small forts at intervals. An immense amount of labour was expended on the *enceinte*, which proved to be quite useless, and played no part whatever in the defence. The need of protection against a raid by Chinese bandits has been put forward as an excuse for the time and money wasted upon its construction.

The line of forts progressed but slowly, and when war broke out in February, 1904, five years after the work had been planned, the state of affairs was as follows:—

Outbreak of war.

Fort Cha-kua-tzu was nearly complete.

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Forts Chi-kuan, Erh-lung, Sung-shu, Yi-tzu Shan, and Ta-an-tzu Shan were fairly well advanced.

Fort Pai-yin was still far from completion, but the ditch of the face and flanks was excavated, and the concrete work was finished.

Fort Ta-yang-kou North was very incomplete, the ditch of the face was excavated, but no concrete work had been begun, and the ditch was unflanked.

Fort No. 6 had not even been traced.

The permanent batteries of Pai-yin North, Chi-kuan and An-tzu Shan East were almost complete.

The permanent battery of Ta-yang-kou South was about half finished.

In addition to the above the following old Chinese works could, with very small improvements, be used as provisional fortifications:—

A work about 1,000 yards north of Fort Pai-yin.

Chi-kuan South-East.

East Pan-lung.

West Pan-lung.

The Chinese Wall from Pai-yin North Battery to Fort Sung-shu.

Fortification of outlying heights.

The importance of the heights extending towards Louisa Bay had long been realized, but lack of funds had prevented any attempt to fortify them permanently. Provisional works* were at once begun on these heights; Ta-ku Shan and Hsiao-ku Shan, which overlooked the line of defence on the east, were also provisionally fortified. The north-east front being most exposed to attack, the efforts of the garrison were largely directed towards strengthening it, but there were apprehensions of a Japanese landing about Pigeon Bay, and a network of trenches was therefore constructed on the west.

Defence of Lun Ho valley and waterworks.

In order to prevent any attempt to carry the heart of the fortress by a rush down the Lun Ho valley, trenches and obstacles were carried across the low ground between Sung-shu Shan and An-tzu Shan. A line of entrenchments, strengthened by the Waterworks and Temple Redoubts, formed an additional defence to the entrance to the valley, and at the same time protected the waterworks near Lung-yen.

Main line of defence.

The line occupied by the permanent works was divided naturally into four sections. The eastern section extended from the sea to the southern road from Port Arthur to Dalny; the north-eastern section, from the southern Dalny road as far as the Lun Ho; the north-western section, from the Lun Ho to the

* The term "provisional" is not altogether satisfactory, but no better expression has yet been devised. Permanent works must of necessity be constructed in time of peace. Provisional works are thrown up when the need for them arises, so as to supply the deficiencies of permanent fortification. They are frequently described as semi-permanent, but as a rule they consist mainly of field fortifications, supplemented by semi-permanent works at certain important points.

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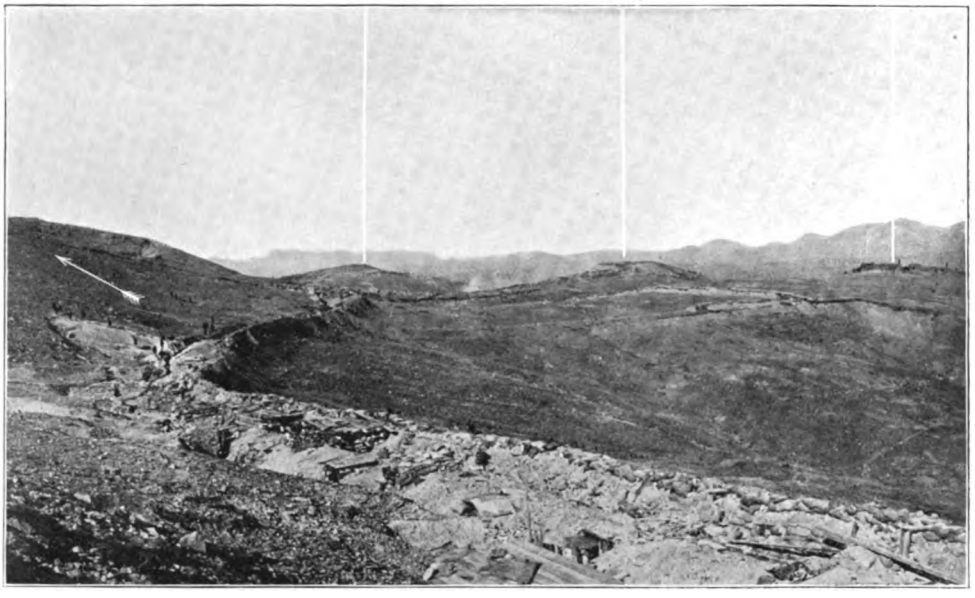
Plate II.

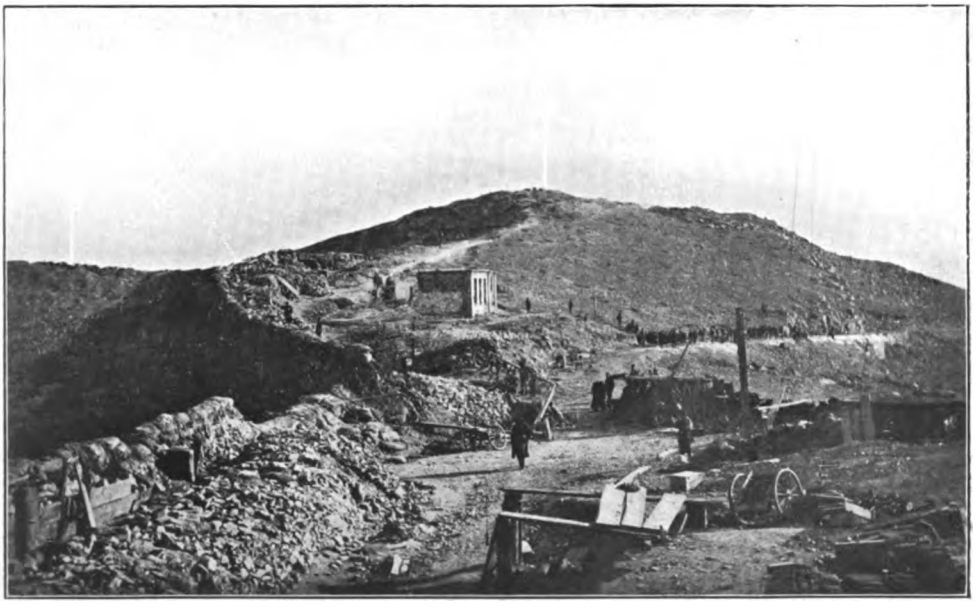
CHINESE WALL.

West Pan-lung. East Pan-lung. P



VIEW FROM A POINT 50 YARDS EAST OF M BATTERY, LOOKING NORTH-WEST.
The arrow shows the direction of the Japanese attack, night of 23rd–24th August, 1904.

Gorge of Chi-kuan Battery. R



VIEW LOOKING SOUTH-EAST FROM A POINT 50 YARDS EAST OF N BATTERY, AND SHOWING THE MILITARY ROAD IN REAR OF THE DEFENCES.

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Port Arthur—203 Metre Hill road; and the western section, from the 203 Metre Hill road as far as the sea.

Excluding coast batteries, the only permanent works in the eastern section were the fort and battery of Pai-yin, and the defences consisted mainly of trenches protected by wire entanglements. The right of the line was thrown forward to Signal Hill, a position which was retained by the Russians until the end of the siege and proved to be of great value as an observation post. The hastily fortified Ta-ku Shan and Hsiao-ku Shan dominated this section.

Eastern section.

The north-eastern section bore the brunt of the attack. Map III/4 shows the defences, which extended from the Sung-shu Supporting Battery to Chi-kuan South-East, and included the permanent forts of Chi-kuan, Erh-lung, and Sung-shu,* and the permanent battery of Chi-kuan. Immediately behind these works ran the Chinese Wall, a rampart of mud and stones about ten feet high and twelve feet thick at the base, with a banquette and parapet for infantry fire (Plate II). The wall served as a curtain, to which the works on the outer spurs acted as bastions or caponiers. It was strengthened by the Russians, who added loopholes and overhead cover, and built strong bomb-proofs under the banquette. Had this old Chinese fortification not been in existence, it is possible that Port Arthur would have fallen to the first attack of the Japanese in August, 1904. The two old Chinese redoubts of East and West Pan-lung were also placed in a state of defence. Emplacements for field guns were built on the three spurs called by the Japanese G, P, and Kobu, and batteries were formed in the Chinese Wall at Q and at Chi-kuan South-East. With the two exceptions of Fort Chi-kuan and Q, every work was surrounded by at least one tier of infantry trenches. As a rule, safe communications were provided to the advanced trenches, either by utilizing the ravines or by providing communicating trenches.

The north-eastern section.

Those trenches which were first constructed appear to have been on the lines of Section A, Plate I, which shows a simple breastwork. Experience taught the necessity for both traverses and head-cover, and the Russians were constantly adding improvements, even when the Japanese saps were within a few yards of them. Section B shows the design of the lower trench surrounding Chi-kuan Battery, as it appeared at the end of the siege. Between the two extreme types, A and B, an innumerable variety of designs were used.

Design of trenches.

Guns of the smaller calibres were mounted in all the works of the front line. Chi-kuan Battery was a permanent work, and in Fort Erh-lung a concrete battery was provided; all other emplacements were made of earth, and there was nothing remarkable about their construction except as regards two guns

Artillery emplacements in the line of defence.

* Detailed description of these three forts will be found in Chapters XXII, XXIII, and XXIV.

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mounted in G, to fire across the intervals between that and the adjoining works. These two guns were placed behind the crest of the knoll, in such a position that they could not be seen from the front, but could fire to either flank; they caused the attack much trouble before they were silenced.

Second line of defence.

Along the crest of the heights behind the Chinese Wall was a line of batteries all using direct fire with the exception of I Battery, which comprised four heavy howitzers on extemporized garrison mountings and used high-angle fire. These batteries were connected by trenches which acted as a support or second line behind the Chinese Wall.

Third line of defence.

Still nearer to the town was a third line which ran, with interruptions, from the Sung-shu Supporting Battery to Naval Ridge and Chi-kuan Peak. This line of trenches was not of strong section, and was mainly constructed after the development of the attack, in order to act as a retrenchment to the threatened front.

The north-western section.

The north-western section of the fortress included Forts Yi-tzu Shan and Ta-an-tzu Shan, and the permanent battery of An-tzu Shan East. The heights of An-tzu Shan and Yi-tzu Shan were so steep as to be almost precipitous, and commanded an excellent view of the low ground to the north. Trenches connected the permanent works. This section was secure from attack so long as the outlying positions of 203 Metre Hill, 174 Metre Hill, Head-Quarter Hill, &c., remained in Russian hands.

The western section.

The western section included Fort Cha-kua-tzu, and the permanent battery of Ta-yang-kou South. Fort Ta-yang-kou North was still far from completion. A perfect network of trenches covered the hills in this section.

Obstacles.

The front of the line was everywhere covered by wire entanglements which, although fairly efficient obstacles, were not so strong as they might have been. Wooden posts only were available, and it was impossible to set them firmly in the hard ground, while, since barbed wire was to be obtained only in very small quantities, the entanglements were largely made of the telegraph wire from the railway. Three to five lines of posts were used. These entanglements were a source of great loss to the Japanese, especially during the earlier stages of the siege, when it was found necessary for trained men to go forward and destroy them before an assault could hope for success. In the later stages, when the trenches were close up to the obstacle, the destruction sometimes occupied several nights, single men seizing their opportunity and doing what damage they could under cover of darkness. The wires and posts were cut and dragged away whenever possible, or charges of explosive were placed so as to make a breach. The plan was tried of tying ropes to the posts and hauling on them from the siege trenches, but was not found satisfactory. Although to all

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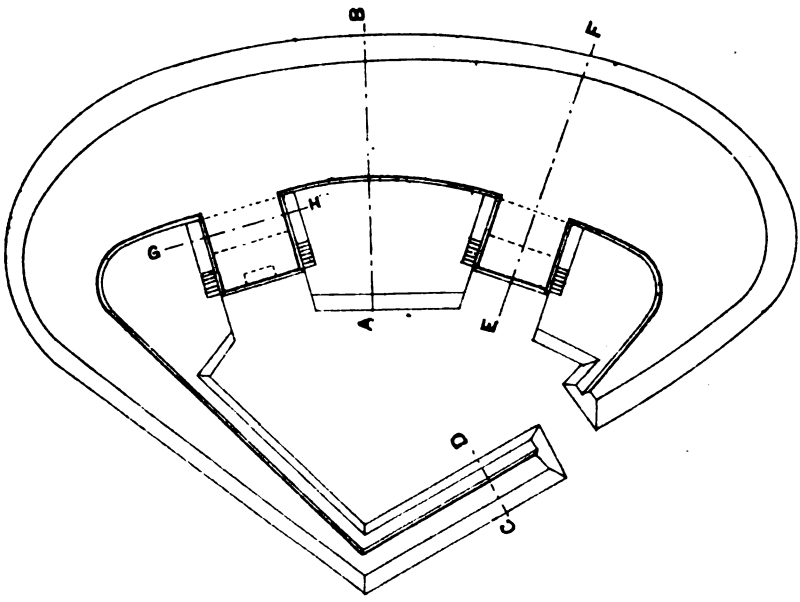
EAST PAN-LUNG



PLAN

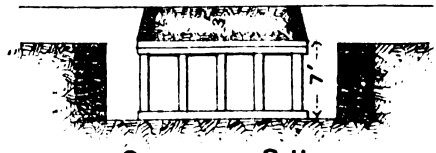
Scale 40 Feet = 1 Inch.

0 10 20 30 40 80 Feet

SECTION A.B

SECTION C.D.

SECTION E.F



SECTION G.H.

Scale of Sections 20 Feet = 1 Inch.

0 5 10 20 40 FEET

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intents and purposes invulnerable by artillery fire, certain of the entanglements which were close to the defences, and were under a heavy bombardment for a long period, were cut to pieces by splinters. Latterly, the siege trenches were almost invariably pushed through the line of obstacles before an assault was delivered. Other impediments to the advance were abattis, tree entanglement, deep military pits, *chevaux de frise*, and inundated ditches. In the ditches of the forts a common device was a plank, two inches thick, through which nails four or five inches in length were driven in such a way that the points protruded two or three inches beyond the wood. The planks were then placed in position with the points of the nails uppermost, and were covered with loose earth. The Japanese in their assaults frequently wore their native straw sandals over linen socks, and against such footgear the nails were very effective.

Electric fence.

A fence was designed to carry a current capable of killing any man who should touch it, but proved a total failure. It consisted of a single wire hung on porcelain insulators, supported by posts about three feet high. Across the Lun Ho valley there were three lines of this fence, ten feet apart. Current was supplied from generating stations near Fort Erh-lung, Chi-kuan Battery, and Pai-yin North Battery.

Land mines and fougasses.

Land mines and fougasses were placed in large numbers in most of the ravines near the line of defence, They were fired electrically, either by observation or by a circuit-closer which acted when trodden upon, but they inflicted little or no loss upon the assailants.

Searchlights.

The searchlights used in the land defences did not produce the results which were expected. The positions were not always judiciously chosen, the projectors being sometimes placed inside, or close to, works which were subjected to constant bombardment, with the result that lights were frequently put out of action by fire not specially directed against them. The generating stations were always in rear of the lights and out of sight; they were sometimes placed in bombproofs and sometimes had no protection. They suffered far more damage than did the lights, being frequently wrecked by artillery fire directed at the works near them. The projectors were usually mounted under a splinter-proof roof large enough to protect both projector and crew against shrapnel, but occasionally the roof was dispensed with, the projector being mounted on rails to allow of it being withdrawn if necessary. There was no organized system under which the lights were used, and they were generally of as much service to the Japanese as to the Russians. A notable exception, however, was the case of the night attack on the Sung-shu Supporting Battery, on November 26th, when the repulse was largely due to the searchlights.

Magnesium rockets were found to be a very effective means of lighting up the foreground. They were very freely used by

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Magnesium rockets.

the Russians, and had the advantage of illuminating the Japanese works while leaving the Russian lines in darkness.*

Light railways were very little used inside Port Arthur. A line of 2 ft. 6-in. gauge ran round the north shore of the harbour to the magazine on the Tiger Peninsula. Otherwise all transport work was carried out upon the roads, which were numerous and in most cases excellent; they were, however, in some places so much exposed to fire as to be impassable except at night. The eastern and north-eastern sections possessed a wide, metalled road, with easy gradients, running along the line of defence, and taking the place of the girdle railway found in modern fortresses. The distances in Port Arthur were so small that the need for a light railway was scarcely felt.

Communications.

The telegraph and telephone lines consisted largely of air line, but on the front of attack a considerable quantity of cable was employed; this was often laid on the surface of the ground instead of being buried, and interruptions were consequently of frequent occurrence.

The want of a balloon was very severely felt.† The Japanese relied very largely on concealment for the protection of their camps and batteries, and a balloon inside Port Arthur might have had considerable influence upon the siege. Attempts were made to manufacture one, but failed owing to the lack of materials for the production of hydrogen. No effort was made to use coal gas, and by the end of September the idea was abandoned.

Balloons.

The artillery was mainly placed inside the works or on the heights in rear, but the slopes were so steep that in order to ensure that the foreground should be swept by direct fire, it was necessary to put many of the guns on the crests, or even a little to the front of them. On the front of attack the guns so placed formed conspicuous targets and were in most cases quickly put out of action. For the duel with the besieging artillery, guns were mounted in more retired positions, such, for example, as Naval Ridge, where they passed through the whole siege without receiving any damage. It was soon found impossible to keep heavy guns in action inside the permanent forts, for their position was too clearly defined and they served merely to draw fire upon the garrison. On the other hand, it was always found possible to bring a few light guns into action, both in permanent and provisional works, at the moment of an

Artillery of the defence.

* From the use, by English-speaking Japanese officers, of the term "searchlight" to describe all classes of illuminants, somewhat erroneous ideas have been conceived as to the use of searchlights during the August assaults. Searchlights played little or no part in these operations, owing to the siting of the projectors (see Map III/4). A light was placed inside Fort Erh-lung, but was put out of action at an early stage. Magnesium rockets, however, were freely used and proved of great service to the Russians.

† A balloon, intended for use in Port Arthur, was captured at sea on the very first day of the war.

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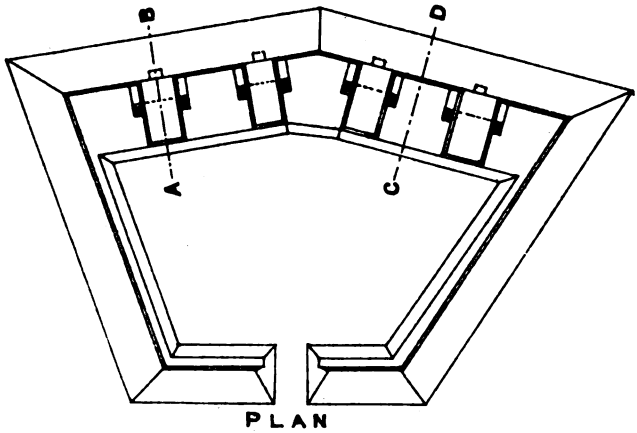
WEST PAN-LUNG.



PLAN

Scale 40 Feet = 1 Inch

0 10 20 30 40 80 Feet

SECTION A.B.

SECTION C D.

Scale of Sections 20 feet - 1 Inch.

0 5 10 20 40 50 Feet.

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Weller & Graham

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assault, no matter how heavy the previous bombardment. While the Japanese trenches were still at some distance, these light guns were kept under cover and were run up only when the assault began, but when the saps drew close to their objectives there was no time to run up the guns, and they then had to be masked and left in position. Even so they frequently escaped destruction and, by firing case at close range, inflicted severe loss upon the Japanese.

That portion of the armament which used indirect fire was for the most part well concealed, but a remarkable exception was I Battery, where the 9-inch howitzers were emplaced on a ridge.

The armament of the coast defences was turned round and used against the besiegers; the batteries formed, in most instances, very conspicuous targets, but their superior power allowed them to reach the Japanese, who for some time could make no effective reply. In the later stages, however, the coast batteries began to suffer.

Map III/3 gives in detail the heavier portion of the armament of Port Arthur. Between the larger guns a number of field guns and light quick-firers were mounted in earth emplacements, whence they could be moved if required. Map III/4 shows the complete armament on the front of attack, the arrangement of which can be taken as typical of the whole fortress.

Although Port Arthur was not too freely provided with ammunition, the amount remaining at the time of the capitulation,* shows that the supply must have been fairly liberal. The chief deficiency was as regards fuzes, especially for shrapnel. A large number of Chinese guns, with a varied assortment of ammunition, had been brought from Peking in 1900, and these served to eke out the supply for the regular armament, but the greatest assistance was received from the navy, both as regards guns and personnel.

The land defences as a whole were not of the most modern type. No armour was used in any of the permanent works,† and the ruling thickness of concrete was from three feet to four feet six inches. In the coast batteries it was slightly thicker. Against the shells from the Japanese 6-in. howitzers and mortars, this thickness was sufficient except when several shells struck the same spot in succession, but it was quite incapable of withstanding an attack by 11-in. howitzers. No counter-mine galleries were prepared during peace time, so that the attack was generally allowed to reach the crest of the glacis without having recourse to mining. The counterscarp galleries were not attacked by artillery, but were easily destroyed by mines. No arrangements were made for illuminating the ditches.

Value of the defences.

Although the permanent forts were incomplete and not of the

* See Appendix G.

† In many accounts of this siege, reference is made to armoured observation stations. These were merely extemporized structures of steel plates, perhaps 1-inch thick, and were not armoured stations as the term is understood in modern fortification.

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strongest construction, it will be seen that they justified their existence, since the Japanese in every instance found themselves for several weeks unable to advance beyond the crest of the glacis except by using mines. The deep ditches, flanked by machine guns, proved to be impassable obstacles; and even after the ditches were dead, the Japanese found it impossible to maintain themselves on the parapets, the defenders being able, by means of retrenchments communicating with bombproof cover in the gorges, to hold them at bay until the forts were reduced to ruins and no longer tenable.

Supplies.

Even at the end of the siege there was no serious lack of food, although the troops had for some time been on short rations. Appendix G shows the amount left at the time of the capitulation.

Clothing was not supplied on a scale sufficiently liberal for a winter in an almost arctic climate, and boots were especially scarce.

Water.

Water was obtained from the waterworks near Lung-yen, outside the line of fortifications. A sufficient supply could, however, be obtained from wells inside the fortress, and there was, in addition, a large condensing plant.

Medical.

Hospital accommodation was provided on a very liberal scale. Two large garrison hospitals existed before the war, two reserve hospitals were sent from Manchuria, two were provided by the Red Cross Society, there was a large civil hospital, and a very well equipped naval establishment. There were, in addition, three hospital ships, but the danger to these from the Japanese bombardment became so great that they were abandoned. Except in the matter of dressings there was never any deficiency of medical stores; drugs and surgical appliances were provided in ample quantities. Towards the end of the siege, however, the number of sick increased very greatly, and the hospitals began to suffer from the indirect fire of the Japanese artillery, so that there was much of the hardship and overcrowding inseparable from the hospitals of a besieged fortress.

Housing of troops.

No bombproof accommodation was provided except in the permanent works, but during the siege the troops occupying the front line of trenches strengthened their field casemates to an extent which rendered them proof against any shell of smaller calibre than eleven inches. In the front line most of the men who were not actually in the trenches lived in shelters on the reverse slopes of the hills, trusting to concealment for protection, for the shelters were rarely even splinter-proof. The reserves were placed either in barracks or in special winter huts.

Garrisons.

Great uncertainty exists as to the strength of the garrisons allotted to the various forts. In the early days of the siege one company of about two hundred men was assigned to each; these numbers appear to have been increased later, and towards the end there were three hundred and fifty men in Fort Erh-lung.

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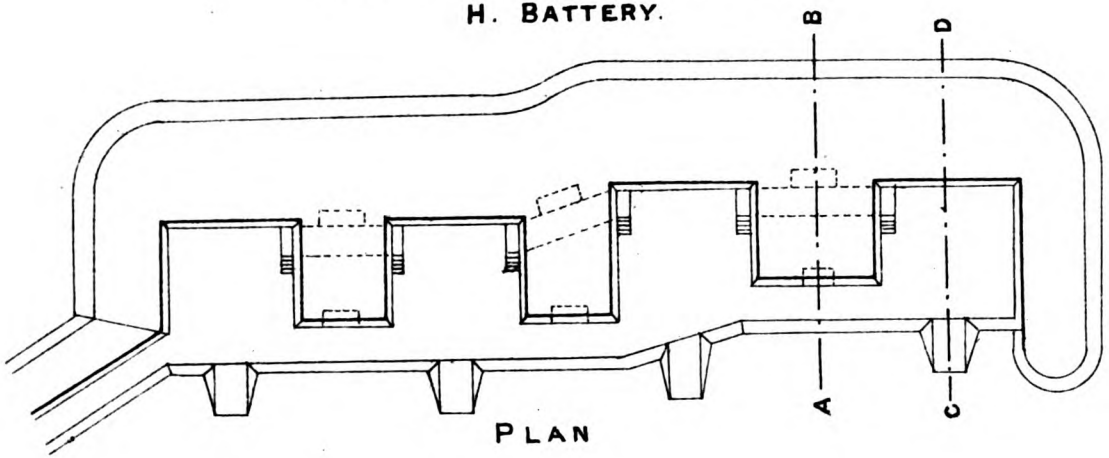
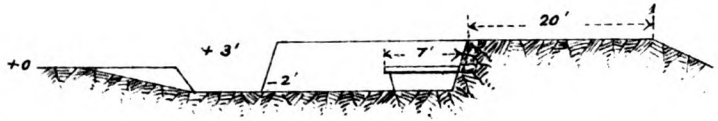
Plate V.

PROVISIONAL BATTERIES.

H. BATTERY.

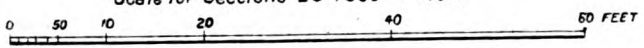


PLAN



SECTION C D

Scale for Sections 20 Feet = 1 Inch.



Scale for Plans 40 Feet = 1 Inch.

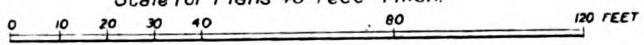


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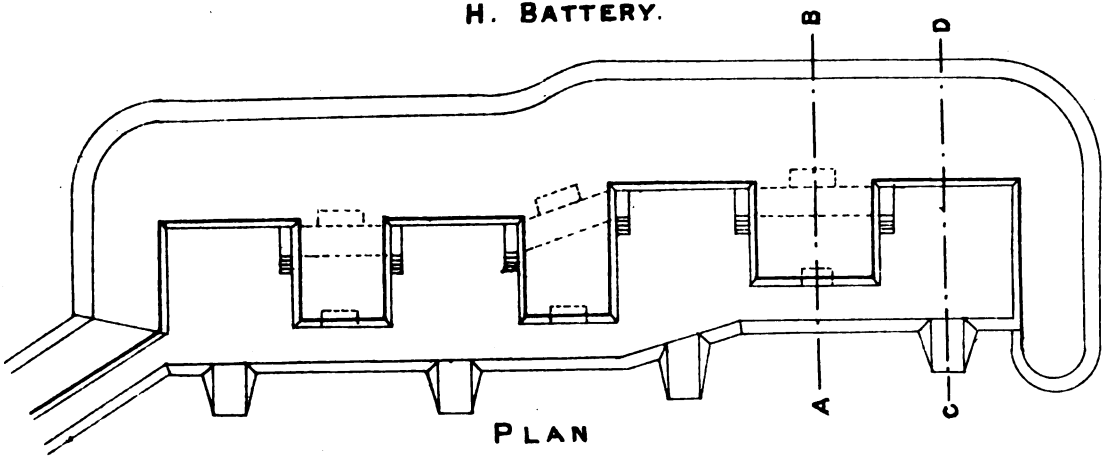
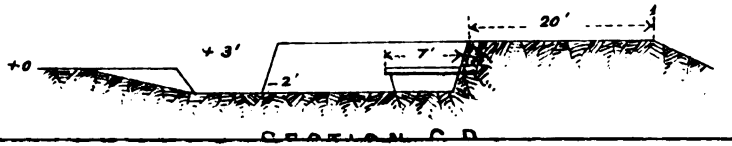
Plate V.

PROVISIONAL BATTERIES.

H. BATTERY.

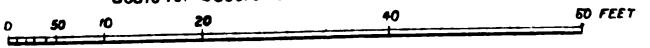


PLAN

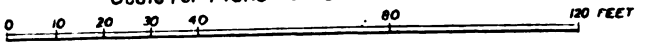


SECTION C D

Scale for Sections 20 Feet = 1 Inch.



Scale for Plans 40 Feet = 1 Inch.



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CHAPTER XVI.

THE CAPTURE OF TA-KU SHAN AND HSIAO-KU SHAN. FIRST GENERAL ASSAULT. Maps III/2 and III/4.

Situation.

BY the 1st August, the fortress was closely invested by land. The blockade at sea, although strict, was not perfect, and communication with the outside world could occasionally be effected by means of junks and destroyers. The Japanese troops were suffering severely from sickness, but being by this time accustomed to victory they were eager to assault.

Although for the past three months the Russians had fallen back before each attack, they now realized that their backs were against the wall, and were prepared to offer resistance to the last. The battles of Te-li-ssu* and Ta-shih-chiao* had made it clear that there was little chance of relief from the land side for many month to come, but there was still hope of assistance from Europe, in the shape of the Baltic fleet which was being fitted out at Libau. The health of the men was good, and their rations, if not luxurious, were still ample. But the presence inside Port Arthur of both General Stessel and General Smirnov was causing an amount of friction which could not fail to be detrimental to the efficiency of the defence.

A reference to the map will show that a suitable line of close investment clearly defines itself around Port Arthur. From Louisa Bay it runs eastward to the heights near Feng-huang Shan, thence curving to the southward along the hills east of Tuan-shan-tzu, to Ta-ku Shan, Hsiao-ku Shan, and Takhe Bay.† It is, in fact, the first of the alternative lines of defence already mentioned, and its distance from the principal line varies from seven thousand yards in the west, to two thousand yards in the east.

Selection of front of attack.

At the beginning of August, Ta-ku Shan and Hsiao-ku Shan were still in Russian hands; but with their capture the Japanese would find themselves in a position admirably adapted for defence against a sortie from any quarter. General Nogi would then have to select the point against which to concentrate his efforts. In making his decision he had to bear in mind the fact that the requirements of the army in the north demanded that the fortress should be taken in the shortest possible time.‡ Apart from this ruling factor four points had to be weighed. First, the front selected for attack should not be so strong, either by nature or through

* See Part II of this history.

† The correct rendering is Ta-ho Bay, but the better known name has been adhered to.

‡ For the positions of the field armies in August, 1904, see Strategical Map 3.

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fortification, as to render prohibitive the cost of taking it; secondly, it should be conveniently placed with regard to his communications; thirdly, its capture should give him a position whence he would be able to force a speedy surrender; fourthly, there should be convenient positions for his siege batteries.

The eastern front would be exposed to attack after the capture of Ta-ku Shan and Hsiao-ku Shan, but it was flanked by the sea. The presence of Russian mines would make it impossible for the Japanese fleet to assist the army, whereas the Russian gunboats were daily proving themselves able to manœuvre in those waters. The sea might therefore prove to be a source of weakness to the besiegers. The north-eastern front included three permanent forts, and was the most strongly fortified of all, but it formed a pronounced salient, and the attack would therefore be less exposed to flanking fire than elsewhere; nevertheless, a subsidiary attack on the positions at 174 Metre Hill, Namako Yama, and the Waterworks Redoubt would be necessary. The north-western front, although much ground at the foot of its steep slopes was not exposed to fire from the works on the crests, was partly flanked by the works near Fort Sung-shu, which would consequently have to be neutralized or captured. Moreover, owing to the frowning heights which formed its northern face, the north-western front was more formidable in appearance than it was in reality. Once captured, however, it would take in reverse the north-eastern front of the fortress. The western front was flanked by the sea and, except for a gap in its southern half, where a fort had been planned but not begun and nothing more than field fortifications existed, it was as strong as the north-western portion of the line. Before either the north-western or western sections could be attacked, it would be necessary to capture the successive lines of defence from 174 Metre Hill to 203 Metre and Division Hills.

As regards the second factor, that of communications, the north-eastern front was by far the most conveniently situated with reference to the railway. There was no physical obstacle of any kind to prevent the extension of the line, without break of gauge, from Chang-ling-tzu via Tso-chia-tun, through any of the western gaps in the hills, to Louisa Bay and thence south so as to bring the north-western and western fronts within reach of the railway. But the Japanese were ill-provided with railway troops, and the undertaking doubtless appeared to them more formidable than it would seem to armies more used to railway work.

Taking next the third consideration, it must be borne in mind that the chief object to be attained by the capture of Port Arthur was the destruction of the Russian fleet. Since the ships in harbour could be reached by the shells of guns and howitzers placed anywhere in the line of close investment, it would obviously not be essential to mount artillery on the captured front of attack; all that would be necessary would be the possession of some point whence the fire could be directed. The peak of Wang-tai, situated in the centre of the north-eastern front and commanding a view of almost every portion of the harbour, appeared to afford the necessary

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facilities; and some distance to the westward was 203 Metre Hill, which would serve equally well, and of which the defences were in August by no means so strong as they were found to be later in the siege. But the possibility of capturing this point, and of directing the bombardment from it without attacking the main line does not seem to have occurred to the Japanese at this stage.

As regards the fourth factor, the best artillery positions were among the hills to the north and east of the fortress.

Briefly stated, the choice lay between the north-eastern and north-western fronts. Of these the north-eastern was by far the stronger; nevertheless, it might perhaps be taken by open assault, and was the more conveniently situated of the two. On the other hand the capture of the north-western front would involve the seizure of successive lines of provisional defences before the main works could be reached, and a longer line of communication would be required. After weighing all these considerations General Nogi decided that the best chance of success was offered by the north-eastern front, which will henceforth be termed the *front of attack*.

Having decided on the front of attack the Japanese proceeded to the mounting of their siege guns and to the formation of their advanced depots. At the beginning of August, railhead was at Shuang-tai-kou, some six miles in rear of the line of investment. Progress with the repair of the line was very slow, and it was not until the 9th or 10th of the month that railhead reached Chang-ling-tzu, where, although the station was out of range from the fortress, the steam of a locomotive would sometimes draw an ineffectual fire. From railhead a portable tramway of two feet gauge was laid between the existing metals as far as Chou-chia-tun, and carried stores under 1½ tons in weight. Anything above 1½ tons was brought up by road. A second tramway was laid from railhead to Tu-cheng-tzu, and carried stores and ammunition for the Naval Brigade. Advanced depots were formed near Chou-chia-tun, where they remained till the end of the siege. Although scarcely out of range of the heavier guns of the fortress, they were concealed from view by the heights to the southward of them, and escaped without damage in spite of several attempts at indirect bombardment.

Formation of depots.

The attack was divided into sections as follows*:—

To the 1st Division was allotted the district lying between the western coast and a line running from Huo-shih-liang, east of Shui-shih-ying, to the valley between Forts Sung-shu and Erh-lung. This task involved the capture of all the outlying western works, of the Temple Redoubts, and of Fort Sung-shu.

Division into sections.

To the 9th Division was given the country east of the 1st Division, as far as a line running from the railway near Tuan-shan-tzu to the ravine between East Pan-lung and P. This would entail the capture of the Waterworks Redoubt, and of the works in the main line from Fort Erh-lung to East Pan-lung inclusive.

* For lines of demarcation between sections see Map III/2.

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The 11th Division had charge of the district between the 9th Division and the sea to the south and east; it would therefore have to capture Ta-ku Shan, Hsiao-ku Shan, and the works on the front of attack from P to Chi-kuan Battery inclusive.

The 4th *Kobi* Brigade was in reserve.

Work proceeded on the siege batteries lettered E to X, but the valleys in which the more easterly of them were situated were overlooked by Ta-ku Shan and Hsiao-ku Shan, so that on some of them nothing could be done except at night. The Russians at times fired very heavily, both from their batteries and their ships, but they failed to draw any reply from the Japanese until the 3rd August, on which date shrapnel was fired at Ta-ku Shan by the mountain batteries of the 11th Division. Little or no infantry fighting took place during the first six days of August, but the Japanese pushed their outposts sufficiently far to the front to protect the work on their siege batteries; and for this purpose they occupied a line which extended roughly from Chang-chia-tun near Louisa Bay, along the foot-hills to Tuan-shan-tzu, thence along the heights to Kuo-chia-kou near Takhe Bay. The Russians fired their fortress guns at every possible target. They also used indirect fire from the heavy guns on board their ships, but under conditions so little conducive to accuracy that the expenditure of ammunition was scarcely justified.

Arming of siege batteries.

The first siege batteries to be completed were the naval batteries near Huo-shih-liang, where the work had been unobserved and consequently uninterrupted.

At 11 a.m. on Sunday, 7th August, 1904, while the inhabitants were at public prayers in the square, one of the two 4·7-inch naval guns at E fired the first shot from landward into Port Arthur. Bombardment from these two guns was carried on intermittently throughout the day, the usual target being the Basin and Old Town, although Forts Erh-lung and Sung-shu were both fired upon. Four men were killed and, among other injuries inflicted, the *Tzesarevich* was hit twice and Admiral Vitgeft was slightly wounded by a shell which wrecked the wireless telegraphy house. Until the 19th August these two 4·7-inch guns were the only pieces used to bombard Port Arthur; but being well concealed from view in heavily blinded emplacements they were never struck by a Russian shell.

From this time onward the possibility of a simultaneous artillery attack from sea and land was a constant menace to the inhabitants. Although they had passed through several bombardments from the sea, and were prepared to bear without complaint the constant stream of shells from the land side, the prospect of attack from both quarters filled them with terror. At first General Stessel forbade the construction of bombproofs attached to the houses; later in the siege he permitted, and even enjoined, their use.

The bombardment by the naval guns was carried on steadily, and resulted in considerable damage both to the fleet and to the dockyard, the *Peresvyet* and the *Retvizan* being hit several times.

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Meanwhile preparations had been made for the capture of Ta-ku Shan and Hsiao-ku Shan. These hills were not strongly fortified, and but for the fact that each was flanked by the other there would have been much dead ground at the foot of their eastern slopes. As it was, with the sea on their southern flank and the flat ground on either bank of the Ta Ho to their front, they presented a formidable position to assault. Half a mile of ground absolutely devoid of cover lay between the two hills and the Japanese trenches, and to make matters worse for the attack, the Ta Ho had been dammed by the Russians, and formed a serious obstacle.

Capture of Ta-ku Shan and Hsiao-ku Shan.

The garrison of Hsiao-ku Shan was estimated at one battalion with two field guns. Two battalions, with ten field guns, held Ta-ku Shan and the ground to the north-west as far as Tung-pa-li-chuang.

On the morning of the 7th August, the 11th Division was occupying the line Tuan-shan-tzu—Kuo-chia-kou; the 10th Brigade was on the right and the 22nd Brigade on the left, their point of junction being the height north of Chu-chia-tun. In addition to his six divisional mountain batteries, General Tsuchiya, the commander of the 11th Division, had at his disposal eight 4·7-inch field howitzers, and twenty-four 3·5-inch mortars.

The 10th Brigade (22nd and 44th Regiments) was detailed to attack a line from Tung-pa-li-chuang as far as the foot of Ta-ku Shan, while the 12th and 43rd Regiments, which formed the 22nd Brigade, were to assault Ta-ku Shan and Hsiao-ku Shan respectively.

To prepare the way for these attacks the whole of the artillery under General Tsuchiya opened fire at 4.30 a.m. on the 7th August. The Russians replied with the guns of their main defences as well as with those on the hills attacked; their fire was very severe and was concentrated chiefly on the mountain guns, which consequently suffered heavy loss. The artillery fire lasted all day. It was not, strictly speaking, an artillery duel, since the Japanese guns were concentrating their fire upon the two hills, and were not attempting to reply to the heavy guns of the fortress. Indeed, at this period no Japanese gun had been mounted which could have made any effective return to the Russian heavy artillery, except the few 4·7-inch naval guns near Huo-shih-liang.

About 7.30 p.m., the artillery preparation being considered sufficient, the Japanese infantry was ordered to advance. On the right, the 10th Brigade drove back without difficulty the Russians opposed to it, although they only fell back as far as Wu-chia-fang. On the left, however, matters were different. Owing to the darkness and heavy rain the Japanese guns were unable effectively to support their infantry, nor could the commander of the 11th Division see how affairs were progressing at Ta-ku Shan and Hsiao-ku Shan. Many men were drowned in crossing the Ta Ho inundation, but in spite of a heavy fire the survivors succeeded in establishing themselves at the foot of both hills, and there they passed the night.

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With the first signs of daylight on the 8th August the bombardment was resumed by every available gun, and shortly afterwards the infantry attempted to ascend the slopes, but for some time met with no success. About noon the cruiser *Novik*, with two gunboats and eight destroyers, the superior power of whose guns enabled them to keep out of range of the Japanese artillery, issued from the harbour and opened a reverse fire from Takhe Bay upon the 12th and 43rd Regiments, which nevertheless clung tenaciously to the ground they had won, and even managed to make slight progress. The Russian vessels were not molested by the Japanese fleet, which was kept at a distance by the mines with which the water was sown, but at 2 p.m., when some naval 12-pounders were brought into action against them, they were forced to retire. By the evening the Japanese artillery fire had made itself felt on the crest of both hills. The defence was most stubborn, the Russian guns firing case at short range into the Japanese as they crept up the slopes. But the entrenchments on the hill-tops did not afford sufficient protection against shrapnel, reinforcement was a matter of difficulty, and by 8 p.m. the defenders of Ta-ku Shan began to make their way down the reverse slope. Seizing their opportunity the Japanese infantry advanced and finally drove the Russians from the trenches, but it was not until some hours later that Hsiao-ku Shan was evacuated.

The Japanese losses during the two days' fighting amounted to 1,280 killed and wounded, of whom the great majority belonged to the 22nd Brigade. The 43rd Regiment alone had 540 casualties, and in its two leading battalions every officer was either killed or wounded. The losses of the Russians are unknown. They left behind them all their guns, but these were damaged by the Japanese fire to an extent which rendered them useless to their captors. Until the end of the siege the guns remained on the hill-tops, and around them the skeletons of their detachments bore witness to the gallantry with which they had been fought.

The capture of Ta-ku Shan and Hsiao-ku Shan was followed by much mutual recrimination on both sides. Undoubtedly these hills were not so strongly fortified as was advisable, but their position was so isolated as to preclude all hope of holding them for more than a brief period. As regards the failure of the Japanese fleet to assist the army when the latter was assailed by Russian gunboats, the risks attending the approach of the fleet would have been very great. This fact, however, was not grasped at the moment by the troops which suffered from the reverse fire, and certain officers of the army did not hesitate to express their opinions on the subject. To prevent any repetition of these tactics on the part of the Russians, the Japanese naval brigade mounted four 12-pr. guns at Y overlooking Takhe Bay. On the 11th August, this battery opened fire on some Russian vessels in the bay and drove them off, with the result that the Japanese left was not again harassed from the sea.

After the evacuation of Ta-ku Shan and Hsiao-ku Shan a hot fire was opened against both hills by the heavy guns of the fortress and of the fleet, so that for some days the Japanese were

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unable to establish themselves on the summits. On the 9th, an attack was made on Ta-ku Shan by a single company of Russian infantry, supported by the fire of the fortress and of some gunboats and destroyers in Takhe Bay, but the Japanese, who were holding the northern slopes of the hill, crept round to the west and took the attack in flank, driving it back with loss. The Russians soon realized that to shell the hills was mere waste of ammunition, and the Japanese were left in possession.

On the 10th August, the Russian fleet put to sea, but the greater part of it was driven back into harbour after suffering considerable loss. Quite accidentally, attention was distracted from the preliminary movements of the warships by a commotion which broke out on the eastern front, where both sides simultaneously opened a hot fire with guns and rifles. The decision to make a sortie necessitated the replacement on board the ships of those guns which had been mounted on the land front, and strenuous efforts were made to re-embark as many as possible. Nevertheless, the fleet put to sea deficient of ten 6-inch guns. In other respects this action had but little effect upon the siege operations.

Sortie of fleet on 10th August.

On the 11th, the besiegers sent in a flag of truce with the following message, which had been addressed from Tokio to the commander-in-chief of the Japanese armies :—

"His Majesty the Emperor of Japan, out of pure benevolence and goodness, sincerely desires that the non-combatants at Port Arthur may be kept, as far as possible, free from the disastrous effects of fire and sword. In pursuance of this Imperial wish, you are ordered to escort to Dalny and to hand over to the commander of that port such women, children, priests, diplomats of neutral countries, and foreign military attachés at Port Arthur as may desire to leave the fortress. Those non-combatants who do not belong to the above category, but whose departure from the fortress will not jeopardize our strategical interests, may be similarly dealt with."

The offer was somewhat curtly declined, since it was considered that the advantage to be derived from reducing the number of useless mouths in the fortress would be more than counterbalanced by the amount of information which the Japanese would acquire.

On the 12th, the warships in the harbour were heavily fired upon. Unfortunately a hospital was hit, and some wounded men received further injuries. In other respects, the day passed quietly but, on the 13th, the Russians who had been holding Wu-chia-fang since the capture of Ta-ku Shan, set fire to the village and fell back to their main line of defence. On this date also a series of operations was initiated which ended in the first attempt to carry the front of attack by main force.

Advance in the west.

In order to protect the right flank of the troops advancing against the front of attack, it was desirable first to carry the positions of Kan-ta Shan, Head-Quarter Hill, and 174 Metre Hill. A determined threat in this quarter would, it was hoped, distract

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the attention of the besiegers from the real objective, and might induce them to concentrate their forces towards the west. To further this object, General Nogi intended to keep his siege guns in the north and east absolutely silent until the moment arrived when the advance against the front of attack should begin. His plan was carefully thought out, but his chances of success were ruined by Chinese spies, through whom it became known in the fortress that work was being undertaken in the north-east.

The attack on the western hills was entrusted to the 1st Division, and since it was almost independent of the operations in other quarters, it can be dealt with first. On the 13th August, the 1st Division occupied a line from Chou-chia-tun, near Louisa Bay, to Huo-shih-liang. On the right was the 1st *Kobi* Brigade (1st, 15th, and 16th *Kobi* Regiments), in the centre the 1st Brigade (1st and 15th Regiments), and on the left the 2nd Brigade (2nd and 3rd Regiments). At 9 p.m. a general advance was made. The *Kobi* brigade occupied a line extending roughly from Sui-chia-tun to the height north-east of Ta-tung-kou. The 1st Brigade sent the 15th Regiment to seize Head-Quarter Hill, while the 1st Regiment was detailed to capture Kan-ta Shan. The 2nd Brigade, on the left, merely held its ground. In pouring rain the 15th Regiment advanced against Head-Quarter Hill, and succeeded in gaining the knoll at its northern end. Owing to the darkness and rain the Japanese were under the impression that they were attacking the main defences, and it was not until the weather cleared shortly after midnight that they found themselves to be in possession merely of a weak advanced position, while the real mass of the hill loomed up to the south of them. Pressing forward they cut the entanglements, and before daylight established themselves below the Russian trenches, but it was only after repeated assaults during the course of the day that the hill was finally captured. Even so the Japanese owed much of their success to the confusion which prevailed in the fortress, and it seems probable that the hill might have been held for a much longer period had its defenders been adequately supported.

The intention of the Japanese had been to press forward without any delay, and the six divisional batteries of the 1st Division, and eight batteries from the 2nd Field Artillery Brigade, had been ordered to take up a position between Hsiao-pan-chia-tun and Chou-chia-tun, and to open fire at daylight on the 14th; but mist and heavy rain prevented an effectual bombardment, and further advance was therefore postponed till the 15th, when height 426, north-east of Hsiao-tung-kou, was captured.

On the 16th and 17th, no fighting occurred; and on the 18th the 2nd Brigade advanced to Kan-ta Shan, which was occupied without opposition, while the eight batteries from the 2nd Field Artillery Brigade moved to the east of that hill.

On the 19th, the commander of the 1st *Kobi* Brigade sent the 1st and 15th *Kobi* Regiments to the assault of 174 Metre Hill; the 1st Brigade remained stationary. The six divisional batteries between Hsiao-pan-chia-tun and Chou-chia-tun were ordered to concentrate their fire on 174 Metre Hill, and during the night

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of the 19th-20th August the two *Kobi* regiments managed to cut the entanglements at the foot of the slopes. Three lines of trenches encircled the hill; the first line was carried at 10.30 a.m. on the 20th; and the second or principal line at 12.30 p.m. The third line lay along the crest, and it was found impossible to carry it by direct assault. All the afternoon the opposing forces clung to either side of the hill-top, separated in point of distance only by some fifty feet, but each concealed from the other by the razor-backed ridge. Their respective artilleries supported them to the best of their ability, but it was almost impossible for the gunners to avoid hitting their own men. Early in the afternoon a Russian quick-firing battery came into action from the western end of Division Hill, and for some minutes swept the Japanese side of 174 Metre Hill with a storm of shrapnel, but the troops refused to move, and before long the battery was withdrawn. At last, shortly before dusk, a small party of Japanese made its way round the western shoulder and took the defenders in flank, thereby enabling the remainder of the attack to advance and carry the last line of defence, driving the Russians back to Namako Yama. As a further result of this reverse, the Russian trenches on Ridge 590 were found to be enfiladed and untenable. They were therefore evacuated, and were shortly afterwards occupied by the Japanese.

The height 331, south-east of Head-Quarter Hill, was also captured on the 19th August, and on the evening of the 20th the height 305 was taken. On the night of the 21st–22nd, the Russians made a determined attempt to recapture these heights but without success. The Japanese, however, did not advance beyond them until Division Hill was evacuated in the following December. On the 21st, the north-east knoll of Namako Yama was captured, but with this success the advance of the 1st Division ended for the time.

Meanwhile, the 1st Cavalry Regiment had pushed forward amongst the hills between Louisa and Pigeon Bays, and had succeeded in establishing an outpost line with its flank on the sea at Yang-tou; the Russians, however, held Solovev Hill. With very little alteration this outpost line was retained until after the capture of 203 Metre Hill in December.

The preliminary movements on the west were now completed, but in other quarters much was occurring. On the 16th August, a flag of truce was sent in with a summons to surrender, worded as follows:—"Although the Russians have given signal proof of their gallantry, still Port Arthur must inevitably fall. Therefore, in order to prevent useless sacrifice of life, and to avoid the danger of violence and pillage by Japanese troops which may have to fight their way into the town, His Imperial Majesty the Emperor of Japan suggests the opening of negotiations for the surrender of the fortress."* On the following day, a curt reply was sent to the

Summons to surrender.

* The summons to surrender forms part of the usual formalities before attacking a fortress, and does not necessarily indicate over-confidence on the part of the besieger.

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effect that the fortress and ships of the Tsar would not surrender without a struggle. At the time of the parley the distance between the combatants was nowhere more than a mile, and yet, during the four and a half months which were to elapse before the Japanese should succeed in breaking down the Russian defence, the combined losses were to exceed a hundred thousand men.

The morning of the 18th* was exceptionally quiet, for scarcely a shot was fired. At 11 a.m., a single shrapnel, fired from a concealed Japanese gun, burst over Q Battery; and in the afternoon the naval guns bombarded the dockyard, wounding two men and killing two, of whom one was a surgeon at work in a hospital. In other respects the Japanese gave no indication of the intended attack, but during the night they, for the first time, used searchlights from Tuan-shan-tzu and from the col east of the naval observing station.

Early on the morning of the 19th, a general bombardment was opened from the recently completed siege batteries.† Fire was concentrated mainly on the defences included in the front of attack, that is to say, from Fort Sung-shu to Chi-kuan Battery inclusive, the target being first one and then another of the works. The Japanese shrapnel fire from guns concealed among the *kao-liang* was most accurate, and accounted for many of the casualties among the Russian personnel; but there was no organized system for bringing an oblique or cross fire to bear. Some of the naval guns, however, fired on the dockyard, and ignited an oil store at the foot of Golden Hill. Later in the day a store of Chinese ammunition caught fire, and several men were killed by Japanese shells while endeavouring to save the contents of the building. Towards evening the Japanese fire died away, and by nightfall it had entirely ceased except for an occasional indirect shot from the naval 4·7-inch guns. The Russian artillery had made heroic efforts to cope with that of the Japanese, but its task had been rendered impossible by the conspicuous position in which most of the guns.

Opening of the bombardment.

* On this date a French steamer ran the blockade and reached the harbour, but having on board nothing but a little champagne and some condensed milk the captain was not well received, and some suspicion as to his *bona fides* was aroused.

† The guns at this time available were :—

With the 1st Division	36 field guns.
„ „ 9th „	36 mountain guns.
„ „ 11th „	36 mountain guns.
„ „ 2nd F.A. Brigade ...	72 field guns.
„ „ Howitzer Regiment ...	28 4·7-inch field howitzers.
	8 4·7-inch naval guns.
„ „ Naval Brigade	18 12-pounder naval guns.
„ „ seven battalions of siege artillery	24 3·5-inch mortars.
	72 6-inch mortars.
	16 6-inch field howitzers.
	30 4·7-inch bronze guns.
	4 4·2-inch Krupp guns of latest pattern.

The above guns were not all in action at the same time, nor was the rate of fire very rapid.

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were placed. Wang-tai Battery, with its two 6-inch naval guns, formed the best target and was the first to suffer; the commander was killed and nearly all the men of the detachments were either killed or wounded, and before evening both guns were damaged beyond repair. The three 4·2-inch guns in N Battery were all put out of action in spite of the gallant behaviour of the detachments. H Battery, being a little way to the front of, and below, the crest, fared better than most and kept up its fire all day.

Attack on Waterworks Redoubt.

The Waterworks Redoubt was heavily shelled by some of the naval guns and by the thirty-six mountain guns of the 9th Division. It was very important that this redoubt should be captured before the attack against the main line was pushed home, for otherwise the line of trenches of which it formed a salient would take in flank any troops advancing in the neighbourhood of Pa-li-chuang. Accordingly, at about 5 o'clock on the evening of the 19th August, a battalion of the 19th Regiment, from the 8th Brigade of the 9th Division, left the valley two thousand yards to the north-east of Shui-shih-ying and, taking advantage of the cover afforded by watercourses and the standing *kao-liang*, advanced against the redoubt. The troops moved in successive lines, each of one section (80 men), extended in single rank at three paces interval. An advanced trench, about two hundred and fifty yards from the redoubt, was occupied without difficulty and served as a point of departure for a further attack, which was preceded by heavy rifle fire from the captured trench. Nevertheless, the leading company in the attack met with such a hot reception that out of the hundred and eighty men who left the trench all but thirty fell. The total losses of the battalion were about three hundred and fifty, but it managed to effect a lodgment at the north salient of the redoubt, partly on the parapet and partly in the ditch.

On the morning of the 20th August, the Japanese were in firm occupation of the advanced trench, the entanglement on the glacis of the redoubt was destroyed, and about two hundred men were clinging to the northern salient, with three hundred yards of absolutely open ground between them and the nearest support. When, at 2 p.m., a determined counter-attack was made by the Russians from the railway bridge between Erh-lung and Sung-shu hills, the party in the salient fell back in confusion to the advanced trench, losing heavily on the way from the accurate artillery fire of the Russians. The bodies of those who fell during the retirement remained unburied until the redoubt was finally captured in September. No further attempt was made to capture the Waterworks Redoubt during these operations, and it was put into thorough repair by the garrison, except that the entanglement on the glacis was left in its damaged condition.

While the assault on the Waterworks Redoubt was proceeding a demonstration against the Temple Redoubts was made by the 1st Division, but the attack was not pressed.

During the afternoon of the 20th August, and throughout the 21st, in order to prevent its occupation by the enemy both sides shelled the village of Shui-shih-ying, in which the inhabitants

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were still living. Many were killed, preferring to await death behind closed doors rather than to flee and leave their property to destruction.

General assault.

On the night of the 19th–20th August, simultaneously with the attack on the Waterworks Redoubt, the 9th and 11th Divisions began their advance against the front of attack.*

By this time the 9th Division was occupying a line from Pa-li-chuang to Wu-chia-fang, while the 11th Division prolonged the line via Wang-chia-tun to Hsiao-ku Shan. Both divisions pushed forward and endeavoured to destroy the electric fence, an obstacle which from its novelty was invested with an importance far in excess of its merits. Under cover of the *kao-liang* growing on the slopes below the fence, scouts crept up and severed the wire with cutters, of which the handles had been insulated with bicycle tyres.

Throughout the 20th August the bombardment of the fortress continued. The two Pan-lung Redoubts, P, Fort Chi-kuan, and Q, were especially heavily shelled. During the night the Russians had as far as possible repaired the damages of the previous day, but it was impossible to replace some of the crippled armament, and, weak as it was, the Japanese siege artillery proved itself more than a match for the exposed guns of the fortress, although unable to inflict much damage on the works. A magazine in R Battery blew up and East Pan-lung took fire, burning fiercely for half an hour, but at dusk, in spite of everything, one of the naval 12-prs. in the latter work was still firing. P work suffered severely from the bombardment.

Little is known of what actually occurred on the front of attack between the 20th and 23rd August, since the survivors were unable to give any coherent account of the fighting. The Japanese obtained a firm hold of a line from Pa-li-chuang, along the ravine from culvert No. 1, past Wu-chia-fang, over the col six hundred yards east of Fort Chi-kuan, to the ravines about Wang-chia-tun. It will be seen that from this line numerous watercourses serve as approaches to the works of the defence; the attack soon found that the only possible way of making progress was to follow them, but since they twist in a most bewildering manner, many units lost their way and became mingled with others. Although the watercourses afforded a limited protection, there were many points where they were enfiladed by the fire of the defence; much rain had recently fallen, and the bottom of every ravine was trampled by the constant passage of troops to and fro until it became a morass of blood and filth in which the living slipped and stumbled over the bodies of the dead. The weather being warm and moist, decomposition rapidly set in and rendered the position of the survivors trying in the extreme. Every vestige of cohesion disappeared from the attack, so that everything depended on the energy of the local commanders and on the devotion of their men, who responded to the call with such good

* See Map III/4.

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will that before daylight on the 21st the armament for the close defence was firing case shot; while a little later some of the troops from the 11th Division actually succeeded in closing with the Russians in Q Battery, but at 9 a.m. the fire of the neighbouring works forced them to retire.

On the right of the 11th Division, the men of the 9th Division worked their way up the watercourse to the point W at the foot of the East Pan-lung hill, and during the night of the 20th–21st August they managed to make a small gap at the northern angle of the entanglement, but further progress was rendered impossible by the fire of a machine gun in the northern salient of the trench which surrounded the battery. The troops persevered in spite of enormous losses, but it was found hopeless to attempt any enlargement of the gap in the entanglement, and the assailants were forced to remain in the watercourse, crowded together under the indirect fire of the Russian artillery.

It had been hoped by the Japanese that dawn on the 21st would see a successful charge against the main line of defence, but their expectations proved to be over-sanguine. Seen from the hills in the line of investment, the spectacle just before daylight was most imposing. In the foreground the Waterworks Redoubt, by this time quite repaired, was firing a constant stream of magnesium rockets; searchlights near An-tzu Shan, Fort Sung-shu, and Fort Pai-yin lit up the plain, while constant flashes came from the dark mass of hills which formed the line of defence. There was, however, very little rifle fire, and as the light increased it became apparent that an assault could not take place that morning.

The day turned out fine and bright, and in the sunlight a number of motionless forms could be seen lying at the foot of the slopes below the East Pan-lung entanglement. Now and again a man would spring to his feet and dash back to the head of the watercourse, where the Japanese national flag was waving. On the extreme left, near Ta-ku Shan, the 11th Division was advancing at the double in single file, following a devious course so as to profit as far as possible from the folds in the ground. Men occasionally tried, singly or by twos and threes, to cross the open ground between the watercourses, but almost invariably fell. Throughout the 21st August no progress was made. East Pan-lung Battery, which was still smoking from the fire of the preceding day, was heavily shelled, but was not yet completely silenced, and one of its guns opened during the afternoon. A heavy fire was, therefore, kept up against all the works from Q to West Pan-lung, but in spite of every effort on the part of the Japanese artillery, attempts to advance from the watercourse were invariably checked by the East Pan-lung machine gun and by similar weapons concealed in the neighbouring works.

During the night of the 21st–22nd, the 4th *Kobi* Brigade was placed under the orders of the commander of the 9th Division, but early on the morning of the 22nd August it seemed as though the attack were doomed to failure. A few desperate men among the

Capture of East Pan-lung.

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survivors of the party at W determined to make one more effort, and succeeded in creeping unobserved up to the East Pan-lung machine gun, and in destroying both gun and emplacement by means of explosives. Profiting by the momentary confusion among the defenders, the Japanese from point W seized the trench surrounding the battery, and tried to enlarge the gap in the entanglement, at the same time sending back a message to the effect that East Pan-lung was in their hands. The Russians, however, were still in full possession of the battery itself, while the assailants lay in the triangular space between the parapet and the trench, finding what cover they could in shell craters. So long as they remained prone they were unseen from any point in the defences, and in order to fire at them the Russians were forced to stand on the superior slope of the parapet, a proceeding which was soon rendered impossible by the Japanese shrapnel. The space in which the assailants lay was too small to admit of strong reinforcements, but weak parties were sent up at brief intervals to replace casualties, which increased rapidly when the Russian artillery found the range and began to search the slope. Any Japanese who attempted to rise was at once seen and fired at from West Pan-lung, and by an unseen machine gun which kept up a constant fire; it was impossible to remove the wounded, and the situation of the party became first trying and then critical. The Japanese artillery swept the interior of East Pan-lung, and heavily bombarded both West Pan-lung and P.

Shortly before noon, a Japanese officer and two or three men rose to their feet and dashed at the parapet, where they endeavoured to plant a Japanese flag, but a hand to hand struggle ended in the whole party being either shot or bayoneted. Soon afterwards, crawling on hands and knees round the foot of the parapet, a Russian officer with a dozen men managed to get close to the Japanese and suddenly opened a hot fire upon them. Many gave way before this unexpected attack, and fled in disorder to the watercourse, but were there rallied and re-ascended the hill. The Russians making the counter-attack were nearly all killed.

A badly placed Japanese shrapnel caused a second panic by bursting directly over the party of infantry, but on this occasion also the troops were easily rallied, and the work remained in Japanese hands. By one o'clock the rifle fire on both sides had died down to a mere sputter, but the Japanese artillery was throwing shells of every class into the work, where, in spite of the bombardment, one of the guns fired an occasional shot at intervals throughout the afternoon. Ammunition carriers for the Japanese infantry were constantly running up and down the hill.

At four o'clock numbers of Russian sailors entered the redoubt, moving in single file at wide intervals along the Chinese Wall, which had no traverses and was swept by the Japanese artillery, but in spite of most gallant efforts on the part of the officers, no determined counter-attack was made. The naval commander was killed by a shrapnel, and before long those of

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the garrison who still survived began by twos and threes to leave the work; yet it was still impossible for the Japanese to cross the parapet, since they at once came under fire from the supporting works, of which West Pan-lung occupied the most commanding position.

Meanwhile two companies of Japanese infantry, which had been intended to reinforce the principal attack, were clustered in the watercourse between East and West Pan-lung. A company commander from among the troops in the ravine west of Wu-chia-fang, realizing that it was the defenders of the western redoubt who were rendering so critical the position of the attackers of the eastern work, collected some of his men and joined the two companies in the watercourse. With this force he attacked the western work at 5 p.m. The spectacle of a crowd of men climbing the slopes north-east of the redoubt came as a surprise to the Japanese commanders, but the artillery was promptly concentrated on the work, and the attackers established themselves on the outside of the parapet with a loss which was surprisingly small when compared with that sustained by the troops elsewhere. Indeed it would seem that the attention of the Russians was so firmly fixed upon East Pan-lung that they were unable to direct a heavy fire on the attackers of West Pan-lung until it was too late. The ground up which the attack advanced was seen only from West Pan-lung itself and from the vicinity of East Pan-lung, whence nearly all the defenders had by this time been driven. Nevertheless there was a good deal of fighting before the Russians were finally ejected from West Pan-lung, but by 6 p.m. three Japanese flags were planted on the parapet; the interior of the work was then burning fiercely, but the rifle fire from the Chinese Wall still prevented the Japanese from entering.

Capture of West Pan-lung.

During the night several unsuccessful attempts were made by the Russians to recapture the two redoubts, and it has been suggested that the Japanese would have found them more difficult to retain had they not been provided with closed gorges*; but such criticisms are not quite borne out by the facts, since the Japanese entrenched themselves on the front parapets, leaving the gorges unoccupied for the time. It is, however, true that the closed gorges contributed very slightly to the defence, merely providing a little cover for reserves.

The capture of the two redoubts was due mainly to the pertinacity of the Japanese along the whole front, but especially to the two battalions of the 7th Regiment which assaulted East Pan-lung. At the close of the fighting these two battalions could between them muster only two hundred out of the eighteen hundred men who had gone into action. A certain *Kobi* regiment had been detailed to support the 7th, but showed some hesitation, and much feeling was in consequence manifested against it by the remainder of the Third Army. An earlier attack on the

* Compare the repulse of the Japanese from Q Battery, which had an open gorge, pp. 76 and 77.

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western redoubt might have saved much loss since it appears that the successful assault at 5 p.m. was the only one launched against West Pan-lung. This oversight was undoubtedly due to the unavoidable loss of touch among the units involved in the general attack; in fact it seems probable that the two companies which finally captured the work were ignorant of the situation until it was explained to them by the officer who made his way up the watercourse, for the convexity of the ground, while largely protecting them from the Russian fire, prevented them from watching the progress of the 7th Regiment. At the same time, although the watercourses broke up the cohesion of the attack, it is certain that without the cover which they afforded, the Pan-lung redoubts could not have been taken except by regular siege.

Little occurred during daylight on the 23rd August beyond an intermittent artillery fire on both sides, but the strength of the attack was not exhausted. During the night of the 23rd–24th August, the 9th and 11th Divisions combined in a desperate effort to carry Wang-tai by storm. Attack after attack was made throughout the night. Starting from the Pan-lung redoubts, the Japanese swept irresistibly across the Chinese Wall, reaching H Battery and penetrating some distance up the slopes of Wang-tai, but the concentrated fire of rifles and machine guns prevented them from retaining their ground. Parties lost their way to such an extent that some appear to have found themselves at the edge of the ditch of Fort Chi-kuan. The scene was lit up by the magnesium rockets of the defence, placing the assaulting columns at a great disadvantage since the defenders were well concealed in their entrenchments. The last attack was finally repulsed about 2 a.m. on the 24th, leaving the slopes below Wang-tai and H Battery covered with dead. Following up the retreating Japanese, the Russians for a time regained possession of the Pan-lung redoubts, but only again to lose them.

Throughout the 24th August, about a hundred Japanese clung to the almost vertical outer face of the Chinese Wall north-east of H Battery, where, although separated from the Russians only by the thickness of the earth and rubble, they could not be seen from any point held by the defenders, and suffered only from an occasional hand-grenade tossed over from the other side. However, it was impossible to reinforce them, and during the night of the 24th–25th they fell back to the Pan-lung redoubts.

Thus ended the first general assault on Port Arthur. In return for losses amounting to over 15,000 officers and men, the Japanese were able to show merely the capture of the two Pan-lung redoubts, the retention of which was a doubtful advantage, since it could be effected only by almost superhuman endurance on the part of the troops. H Battery completely overlooked both works from a distance of less than 500 yards, and with its 6-inch guns inflicted heavy damage on the Japanese lodgments on the parapets, while indirect fire from guns and howitzers searched the unseen ground. One company

The end of the assault.

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formed the garrison of each redoubt; the losses from shell fire among the two companies amounted at one period to one hundred a day, but as the Japanese deepened and improved their trenches the number of casualties decreased. Between Wang-tai and the Pan-lung redoubts the ground was covered with dead, and since it was impossible, even at night, for either side to leave the trenches without being fired at, the stench soon became almost unbearable. Trying though it must have been for the Japanese it was infinitely worse for the Russians holding the Chinese Wall, between which and H Battery more than a thousand Japanese corpses were decaying. Strips of cloth soaked in carbolic acid were everywhere hung in the trenches, and the military police, aided by Chinese labour, succeeded in removing several hundred bodies at night. Although the burial parties sustained some loss no attempt was made to use a flag of truce.

The Russians worked hard during the hours of darkness, improving the defences of Wang-tai and H, building blindages,* and digging a deep traversed trench along the back of the Chinese Wall so that troops could move unseen. Shrapnel-proof overhead cover was added to the loopholes in the wall, traverses were built at frequent intervals along its parapet, and a wire entanglement was constructed along the front of the trenches between I Battery and Wang-tai so as to prevent any further attempt at capture by storm. The noise of the working parties would at times draw a very heavy fire from the artillery of the besiegers, but the Japanese searchlights were too far away to be of much use, since they lit up impartially both friend and foe.

On the night of the 24th August, the Japanese dug a communicating trench from W to the eastern work, but to the western redoubt no communication was made until the night of the 28th–29th. Before these dates, communication could only be effected during daylight at great risk, for the Japanese had not yet learnt the importance of at once establishing covered communication with every point captured.

A heavy thunderstorm broke during the night of the 26th–27th August. Each side became impressed with the idea that the other was advancing to the attack under cover of the storm and a tremendous fire, both artillery and small arm, raged for some time along the front, especially in the west. Both sides claimed to have effected a repulse, although in fact no movement of any kind was made. On the following night a few Russian scouts reconnoitred the Pan-lung redoubts with a view to their recapture, and twenty-four hours later a sortie against West Pan-lung was made by one company of sailors and one of Siberian Rifles. Since none of the officers or men knew the ground, a few scouts were attached as guides and headed the column, then came the Rifles, and lastly the sailors. The men moved in single file along a winding path and over the Chinese Wall near I Battery,

Sortie against West Pan-lung.

* A blindage is a covered trench with a roofing at least sufficiently strong to afford protection against rifle and shrapnel bullets.

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where there was a gap in the entanglement. Owing to the darkness the party got much spread out, no plan of attack had been arranged, and when half the men had passed through the gap, cheers were raised by the leaders and a rush was made for the redoubt. Most of the sailors were still on the wrong side of the entanglement, and while some clambered through it, others ran up and down looking for an opening. The first cheers naturally alarmed the Japanese, and the party was forced to cross two hundred yards of open ground under a hot fire, while owing to the eagerness of its leaders it was advancing in driblets instead of in superior force. Utter confusion resulted, the Japanese reserves came up and made the fire still hotter, and the column, after experiencing some difficulty in getting back through the entanglement, discovered that it had returned with a loss of one-third of its strength. A lieutenant and twenty men had managed to penetrate into the redoubt, but being hopelessly outnumbered were all killed after a gallant struggle.

No further infantry fighting occurred during August, but a desultory bombardment was carried on, to which the Russians managed at times to make a by no means ineffective reply, both directly from their coast batteries and indirectly from their ships. Among other incidents a Japanese magazine for the siege batteries at M was blown up by a shell for which the *Retvizan* claimed the credit, and the 10-inch guns of Electric Cliff inflicted considerable loss on the detachments which served the naval guns near Huo-shih-liang.

Remarks.

In other respects the closing days of August passed quietly, for the events of the past few weeks had convinced the Japanese that their scheme for carrying the north-east front by assault was beyond their power, and that Port Arthur could only be reduced by regular siege operations which must last for several months. They have sometimes been accused of headstrong folly in that they attempted, in the first place, to capture a formidable fortress with an artillery which was hopelessly inadequate for the task; but it must be remembered that a siege formed no part of the original plan, and that they hoped to rush the defences, ignoring such permanent works as they could not carry. For this purpose their artillery might have proved sufficient. Moreover, had this plan been successful, the Third Army would have been free to join the forces in the north, and Marshal Oyama would have been able to bring considerably greater numbers into line for the battle of Liao-yang than was actually the case.

Of the gallantry of the Japanese attacks there is no need to speak, for it was equalled only by the stubbornness of the defence, but the actual plan of battle gives rise to two important considerations: first, why the western attack by the 1st Division, even if intended merely as a demonstration, was relaxed at the moment when the assault was launched against the north-east front; secondly, why the assault on the night of the 23rd-24th August was delivered on so narrow a front. In both cases the absence of secondary attacks permitted the defenders to concentrate their

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attention on the points of greatest danger, and even so the margin of safety was at times very small. Indeed, it may fairly be said that the failure of the Japanese to capture the fortress at the first attempt was due not to the lack of heavy guns, nor to mistakes in generalship, but to the stubborn fighting of the Russian soldiers.

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CHAPTER XVII.

ORGANIZATION OF THE JAPANESE THIRD ARMY AS A SIEGE FORCE —CAPTURE OF THE WATERWORKS REDOUBT, TEMPLE REDOUBTS, AND NAMAKO YAMA. MAPS III/4, III/5, AND III/6.

FROM the beginning of September the operations definitely assumed the character of a siege, and a special organization was then devised for the Third Army which, for the time, became a siege force. The composition of the three divisions and the *Kobi* brigades remained unaltered, except that the divisional telegraph sections were all collected under one director; but the organization of the engineers and artillery was found to require considerable modification.*

Situation.

The staff of General Nogi was strengthened by the addition of Colonel Sakakibara, who was specially selected for the post of chief engineer on account of his knowledge of siege operations, and of Major-General Teshima appointed to command the siege artillery, as well as the Naval Brigade which had hitherto possessed some degree of independence. A requisition was also sent to Japan for some heavy howitzers which would be capable of demolishing the permanent forts, and preparations were made for a systematic advance by sap, as follows:—

From the ravines near Wang-chia-tun against Chi-kuan Battery and Kobu; by the 11th Division.

From the ravines near Wu-chia-fang against Q and Fort Chi-kuan; by the 11th Division.

From West Pan-lung against G;† by the 9th Division.

From the advanced Russian trench near the Waterworks Redoubt against that redoubt; by the 9th Division.

From Shui-shih-ying against Temple Redoubt B; by the 1st Division.

The 1st Division also made covered communications in the valleys between Head-Quarter Hill, 174 Metre Hill, and Namako Yama; but these were never, properly speaking, siege works, and consisted merely of screens and walls of sandbags at exposed points. That they were not always effective is shown by the fact that the general commanding the 1st Brigade, while on his way from Head-Quarter Hill to Namako Yama after its capture, was killed by a Russian sharpshooter on the western end of Division Hill.

* Further details of the organization and armanent of the siege force will be found in Appendices J and K.

† These approaches presented at first the unusual feature of running from their point of departure back towards the Japanese lines.

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The front of attack being now clearly defined, the defenders were able to strengthen their works, particularly at the north-east end of Namako Yama, and to begin the preparation of retrenchments behind the Chinese Wall.

By the middle of the month the warships, being unable to put to sea, were almost entirely denuded of their 6-inch and smaller guns, which were used to strengthen the land front, but little effort was made to check the Japanese by counter approaches. Small wing trenches were thrown out from that branch of the Chinese Wall which runs south-west from West Pan-lung, apparently merely with a view to firing on the gorge of the redoubt, but, except for frequent small sorties and an intermittent artillery fire, the Russians made no attempt anywhere to hinder the siege works.

On both sides the actual digging was mostly done under cover of darkness, the Japanese engineers resting and working on alternate nights. The average number of casualties in each sap-head was five per night.

Reinforcements kept the besieging army up to full strength; and as the wastage among the engineers was abnormally high, the 1st and 12th *Kobi* Companies of Engineers were sent to the army for use wherever they might be found of most value. The 1st Company was at once despatched to strengthen the 9th Division engineers, who were working in the trenches against the Water-works Redoubt.

Although the attempts against the front of attack were abandoned for a time, there was still some work for the infantry and, on the 1st September, a demonstration, preceded by a heavy fire of shrapnel, was made against Namako Yama. The right wing of the 1st Division was pushed slightly to the front, and the line of Japanese outposts near Pigeon Bay was advanced by the capture of the height south-west of Fan-chia-tun. On the 3rd, the Russian fire against the two Pan-lung redoubts was unusually severe, over two hundred shells falling into these works, where much damage was done, and heavy loss was sustained by the Japanese. This day, however, marked the climax of the Russian bombardment of the Pan-lung redoubts; henceforward it gradually died away.

Narrative of operations.

On the 6th,* the Japanese bombarded Chi-kuan Peak, which was being used by the Russians as an observing station, and on the same day a demonstration of attack was made against the Waterworks Redoubt. By the 13th, the siege works had approached to a distance of about eighty yards from the Waterworks Redoubt and Redoubt B. The Russians now awoke to their danger, and sorties of the utmost determination were made nightly, but by parties too weak to inflict more than slight damage.

Bombardment of the town, dockyard, and ships was carried on almost daily, but from the 9th to the 16th inclusive a shortage of

* On this date a junk from Chefoo succeeded in reaching Port Arthur, bringing the mail and a few telegrams.

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ammunition forced the Japanese to desist. During these eight days no shells were fired except at the working parties on the defences, and the cessation of hostilities led to the wildest hopes of relief among many of the less well-informed Russians. On the 17th, however, bombardment was resumed.

The besiegers now felt that they were in a sufficiently strong position to justify them in renewing their efforts to reach the main line of defence, and decided to take simultaneously the Waterworks Redoubt and the Temple Redoubts south of Shui-shih-ying. At the same time Namako Yama and 203 Metre Hill were to be carried by assault.

Attack on the Waterworks Redoubt.

The Waterworks Redoubt* furnished a remarkable example of the effectiveness of good provisional defences in the hands of a determined garrison. Moreover, the attack upon it is the first instance of siege works under modern conditions, and the operations which resulted in its capture are therefore worthy of treatment in detail. The peculiar shape of the redoubt led to misconceptions as to its nature. Before the assault of the 19th August the Japanese were under the impression that it was a lunette; and even after they had for a time effected a lodgment inside the work it was shown on their plans as rectangular, and was said to be furnished with iron-plated caponiers, underground galleries, an enormous ditch, and other adjuncts of permanent fortification to which it could lay no claim.

The advanced Russian trench, captured on the 19th August, acted as a point of departure for the siege works. The Japanese extended it to the right and left, loopholed it for musketry, and formed it into their first parallel. Later on it was broadened and deepened, and served as a thoroughfare across this portion of the front. The sap was broken out during the night of the 31st August —1st September. The ground drops slightly towards the west, and in order to take advantage of this fall, which concealed the workers from the Russian trenches on the east, the sap was started right-handed, *i.e.*, with the parapet on the left hand side of a man working in the sap, so that he would use his tools in the way common to all right-handed men. After advancing sixty-five yards an angle was made, and the next two hundred yards of trench were directed just clear of the left of the redoubt. Instead of zigzagging, a traverse was made every thirty yards so as to prevent the trench from being enfiladed.

At a distance of a hundred yards from the redoubt a short second parallel was made, from which three zigzags were driven to points seventy to ninety yards from the crest of the glacis. These points were joined by a trench which then formed the third parallel. A small relief approach to the second parallel was dug on the western side of the main approach.

The plan of the trenches shows with what regularity of style they were begun, and how the straight lines of the practice ground were abandoned after one week's actual experience.

* Plates VI and VII show the redoubt and the siege works.

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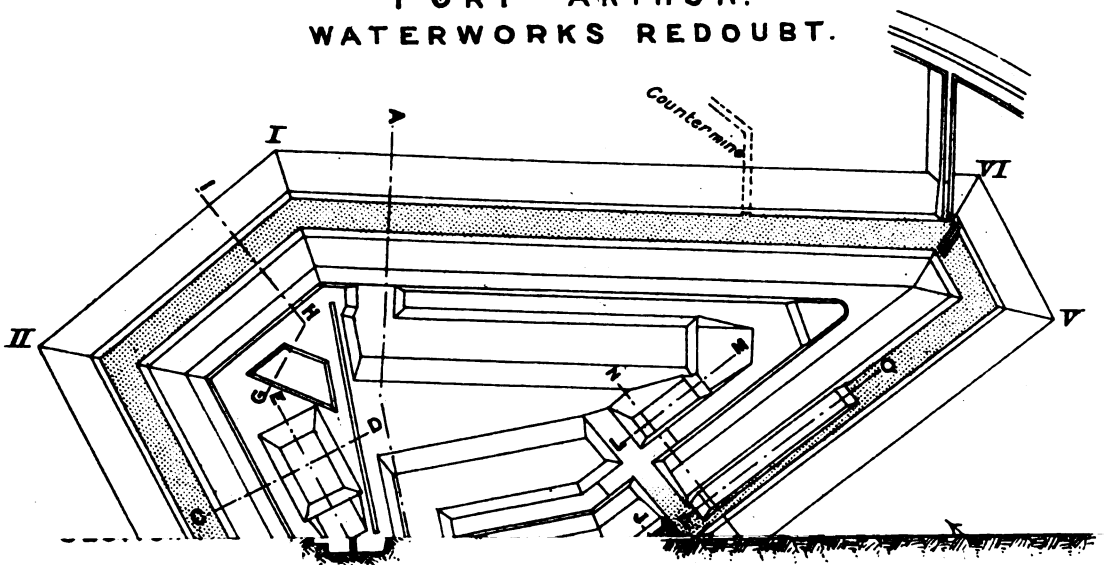
Plate VI.

PORT ARTHUR.
WATERWORKS REDOUBT.



SECTION PQ.

Scale of Sections. 30 Feet = 1 Inch.

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Beyond the second parallel no system could be maintained, and the sappers were compelled to get cover where and how they could.* The supply of sandbags ran short during the work, and Dalny was ransacked for materials from which they could be made, with the result that latterly the trenches was revetted with bags made of flowered calico. The distance separating the combatants, however, was now so short that invisibility was of no importance.

Most of the approaches were finished on the 15th September, and sharpshooters were pushed out from the third parallel into the watercourse on the right, but the approaches against redoubt B, south of Shui-shih-ying, were not yet ready, and it was not until the 19th September that the assault was finally launched.†

The 36th Regiment and one battalion of the 19th Regiment, both belonging to the 18th Brigade, 9th Division, were selected for the assault. These troops were encamped in a ravine beside the stream some two thousand yards north of the redoubt. During the morning of the 19th September the usual slow bombardment of the dockyard was carried on ; fire ceased at noon, but at 1 p.m. was reopened, this time against the Waterworks Redoubt.‡ Beginning with an occasional shot to find the range, the fire grew steadily in intensity until a constant stream of shells was falling into the work, the howitzers appearing to be directed against the bomb-proofs, while the naval guns concentrated their fire upon the north salient, the projectile being in each case either common or high-explosive shell. The Russian reply, although intermittent, was at times both heavy and accurate.

By 3 p.m., timber was protruding from the parapet at the north salient, which had been weakened by undercutting for the sake of better cover, large quantities of debris were sliding into the ditch, and all along the crest the loop-holes were badly damaged. The Japanese field artillery now joined in the bombardment, and enfiladed with shrapnel the northern faces of the redoubt as well as the trenches to the south-east.

About 4 p.m., the Russian 6-inch guns in H Battery began firing at the second and third parallels, which they almost enfiladed, and made excellent practice with their large shrapnel. Casualties were few, although the parallels had no traverses or flank protection, this immunity being chiefly due to the fact that the storming party and supports were not sent into the advanced parallels until the moment for the assault had almost arrived.

* A reference to Map III/4 will further exemplify the lack of regularity in modern siege works.

† The following pieces were used in the bombardment of the Waterworks Redoubt :—

6 naval 12-pr. guns at F ... ... Map III/2.
4 „ 4·7-in. „ G ... ... „ III/2 (two of these guns also took part in the bombardment of B redoubt).
2 naval 4·7-in. guns at J ... ... Map III/6.
4 4·7-in. field howitzers at K_1 south of Feng-huang Shan ... ... „ III/2.
36 mountain guns of the 9th Division north of the Waterworks Redoubt ... „ III/2.

‡ Bombardment of the Temple Redoubts and of Namako Yama commenced about the same time, but will be dealt with separately.

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At 5 p.m., two ground scouts, their heads and bodies protected by steel shields, left the third parallel and started at a walk towards the north salient, moving in zigzags and evidently searching for land mines. The fire was not heavy, but one of them was knocked head-over-heels backwards almost at once, and never moved again.* The second man fell a few yards nearer to the redoubt but managed, by sheltering himself behind his shield, to crawl forward almost to the crest of the glacis before he collapsed.

The bombardment had by this time reached its height, and the commander of the siege artillery telephoned to General Oshima to ask whether the 9th Division was ready to assault. A temporary breakdown of the telephone prevented an answer from being returned before 5.30 p.m., but at that hour word was passed that all was ready; this reply was communicated to the batteries and the artillery changed its target, the mountain guns firing on the trenches in rear of the redoubt, while the heavier guns shelled the main line of forts.

A quarter of an hour later the assaulting column, about four hundred strong, was sent into the advanced trenches, and at 5.40 p.m. the storming party advanced at a steady run towards the north salient. The ditch was reached with small loss, but intermittent rifle fire, and occasional short bursts from a machine gun, broke out as the supports crossed the open. Simultaneously, parties of Japanese worked their way from the third parallel along the watercourse, and engaged the defenders of the south-western trenches; while a timely demonstration against the trenches to the south-east kept many of the defenders fully occupied, with the result that fire was directed against the principal attack only from the northern face and from the short trench to the west.

Although they had reached the ditch without difficulty, the assailants were unable to cross the parapet notwithstanding that a practicable breach had been made by the artillery. The casemates had been to a large extent wrecked by the Japanese fire, but a few of the more determined of the garrison still remained either inside the work, in the gorge, or on the gorge parapet, and proved quite capable of preventing the Japanese from gaining a foothold in the redoubt; for they could only enter the work by twos and threes, and were shot down as fast as they went in. No caponiers existed, but machine guns placed behind two breastworks of stone-filled barrels and sandbags, checked every attempt to work round to the gorge along the bottom of the ditch, which was also swept by artillery fire of every description from the batteries in the main line of defence.

Huddled together in the cramped space, with hand-grenades raining down upon them, and suffering heavily from the defenders' artillery, the assailants held on till 6.30 p.m., at which hour some two hundred and fifty men ran back into the advanced parallels, many falling on the way. A certain number still remained in the ditch, waving a Japanese flag above the crest of

* He was apparently struck by a 1-pr. shell which destroyed both him and his shield.

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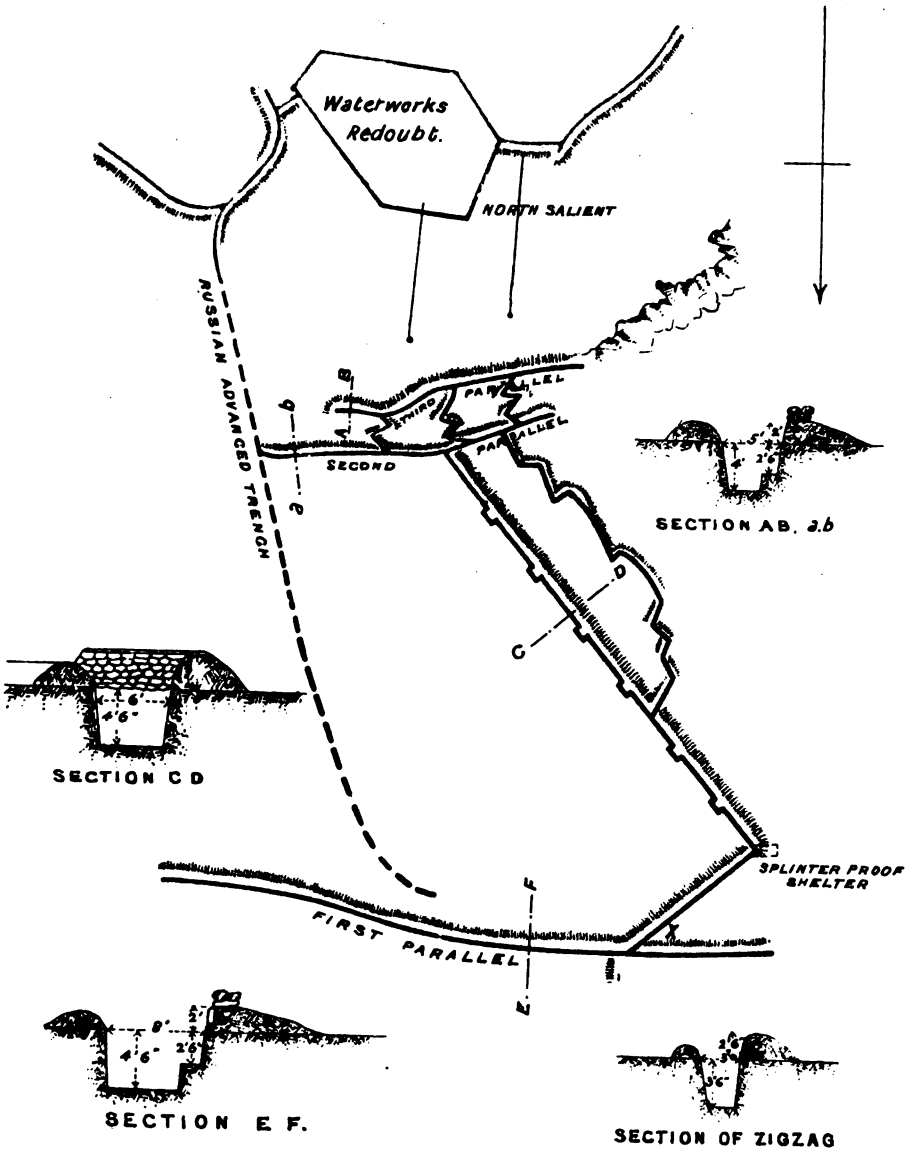
ATTACK ON WATERWORKS REDOUBT.



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the glacis to inform the artillery of their presence, and when darkness fell the situation was unchanged. During the night the assault was renewed, and at 2 a.m. a party of Japanese at last succeeded in driving the defenders from the work. The morning of the 20th September saw the empty redoubt burning fiercely, and the trenches both to the south-east and south-west in Japanese hands.

The Japanese casualties were about 500. Those of the Russians are unknown.

While the 9th Division was engaged in the capture of the Waterworks Redoubt, the 1st Division was carrying out the attacks on the Temple Redoubts, on Namako Yama, and on 203 Metre Hill. In preparation for this task, which was certain to prove extremely severe, the artillery of the 1st Division was greatly strengthened,* and twenty-four machine guns were attached to various infantry units.

The 16th and 18th Field Artillery Regiments, of the 2nd Field Artillery Brigade, each detached a few guns to the height north-west of Kan-ta Shan in order to fire on Namako Yama and 203 Metre Hill. The remainder of the field artillery brigade fired on the Waterworks and Temple Redoubts.

Capture of the Temple Redoubts.

B Redoubt, which it was proposed to carry first, was by far the strongest of the four works to be attacked. In shape it was a lunette, with ditch, parapet, and casemates very similar to those of the Waterworks Redoubt, but the gorge was closed merely by an ordinary trench, and the ditch was not more than six feet deep. From 2 to 6 p.m. on the 19th, it was bombarded by the two 4·7-in. guns south of Tien-han-kou, and by a portion of the field artillery brigade, and suffered considerable damage, but not so much as to become untenable. The siege works had already penetrated the entanglement and reached a point eighty yards from the ditch. Preceded by two ground scouts a storming column of the 3rd Regiment advanced to the attack, but the fire from machine guns, both inside and outside the work, was so effective that the assailants were unable to gain a foothold on the

* The following guns were placed at the disposal of General Matsumura :—

5 naval 12 pr. guns south of Kan-ta Shan.
2 „ 4·7-in. „ south of Tien-han-kou.
12 4·7-in. field howitzers north of Tien-han-kou.
12 3·5-in. mortars south of Hsiao-tung-kou.
12 field guns (two batteries, 17th Regt.) at Hsiao-han-chia-tun.
18 „ (three batteries, 1st Regt.) at Sui-chia-tun.
24 „ (three batteries, 1st Regt., and one 17th Regt.) west of Head-Quarter Hill.
6 field guns (one battery, 17th Regt.) on height 331 west of Shui-shih-ying.

In addition, there were eight 4-pr. Hotchkiss guns, of which two were in Shui-shih-ying, two with each of the columns attacking Namako Yama and 203 Metre Hill respectively, and two on 174 Metre Hill.

Each of the batteries at Sui-chia-tun detached a section. The three sections were placed respectively at Wang-chia-tien-tzu, on the col east of Ta-ping-kou, and on the western peak of 174 Metre Hill.

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parapet, although they managed to enter the ditch. After darkness had fallen several further attempts were made, but the troops failed to establish themselves inside the work, and at 2 a.m. on the 20th they were recalled to their own trenches.

At daybreak the bombardment was resumed, aided by the naval guns which had taken part in the attack on the Waterworks Redoubt. Meanwhile, portions of the 18th Brigade of the 9th Division, after capturing the Waterworks Redoubt, had extended to the south-west and had secured possession of D Redoubt, an insignificant work of little strength, without either ditch or casemates. This success was unimportant in itself, but it helped to dishearten the defenders of A, B, and C Redoubts, and of the trenches connecting them. The men were willing enough to remain in their works, but it was not clearly known to what extent the Japanese had succeeded in establishing themselves, and a fresh advance on the part of the 3rd Regiment resulted in B Redoubt being carried at 9.40 a.m. on the 20th September. Following on the heels of the Russians as they retired from B, the Japanese took A and C* works in quick succession and almost without loss, the defenders falling back down the numerous watercourses which here furrow the ground. Reinforcements for Namako Yama which were passing up the valley between the railway and Division Hill at once came under fire from the Japanese in A and C, but by moving at the double in single file at wide interval they managed to pass the dangerous point with little or no loss.

Capture of Namako Yama.

Namako Yama is a long narrow hill with almost precipitous sides. A sharp indentation in the centre divides the ridge or backbone into two peaks. A trench, partly covered over and provided with sand bag loopholes, encircled the hill near the crest; and at the northern end there was a second trench at a slightly lower level. At the highest point of the northern peak were two 6-inch (3-ton) guns on "garrison" mountings. The garrison consisted of detachments of East Siberian troops and sailors, in all about one thousand men. The knoll two hundred and fifty yards north-east of the main hill had been occupied by the Japanese since the 21st August.

At 2 p.m. on the 19th September, a bombardment was opened by the heavy artillery of the 1st Division, while the 12-pounders and field artillery joined in rather later. The guns on Namako Yama were much exposed, and although gallantly served for some time they were finally silenced.

The infantry attack began at 6 p.m. Just as it was growing dusk, two battalions of the 1st Regiment advanced round the western side of the north-eastern knoll as far as the main hill below the Russian trenches, where the steep and rocky slope afforded fair shelter from the Russian fire. Japanese machine guns were at once brought into action from the knoll, and with their support the infantry succeeded in remaining on the hill-side until 11 p.m., when the advance was resumed. The lower Russian

* Neither of these works had either ditch or casemates.

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trench was then carried, and sufficient men were left to hold it, while the remainder returned to their position down the slope.

Bombardment was resumed with daylight on the morning of the 20th. Some Japanese gunboats fired from the neighbourhood of Louisa Bay, and threw several shells dangerously close to the men in the lower trench before they distinguished the Japanese flags which were waving from it, but without doing any serious damage.

During the morning, the 15th Regiment, from its position on the col east of Ta-ping-kou, attempted an attack on the south-western corner of Namako Yama, but the valley which it had to cross was thoroughly commanded from 203 Metre Hill, and it lost heavily without accomplishing anything.

After this reverse, the Japanese infantry remained inactive for some hours until, between 3 and 4 p.m., one of the battalions of the 1st Regiment on the northern slopes rushed up the hill in close formation, and after a hand to hand fight, in which grenades were freely used, succeeded in carrying the upper trench. The success of this assault was largely due to an almost simultaneous flank attack delivered by the battalion of the 1st Regiment which had hitherto been in reserve. This battalion advanced against the centre of the hill, moving up the depression which there cuts deeply into the western slopes. The Russians had been losing very heavily, their officers were nearly all disabled, and on the approach of the flank attack the cry was raised that they were surrounded. In spite of the efforts of the few remaining officers, the survivors of the garrison broke and fell back behind Akasaka Yama.

The Waterworks Redoubt, the Temple Redoubts, and Namako Yama were now in Japanese hands, but the task was not yet complete, for 203 Metre Hill was still held by the defence. The Russian garrison consisted of detachments from various units, amounting in all to about 1,500 men;* while the troops selected for the attack were the 1st *Kobi* Brigade.

The attack was made from three directions, on the evening of the 20th September. Two of the columns were repulsed at once, but the third, advancing along the col which connects the ridge 590 with 203 Metre Hill, succeeded in effecting a lodgment at the south-western corner of the upper trench, just at the spot where the first foothold was secured during the assaults in December. Six hundred yards of open ground lay between this gallant band and the nearest supports. Nevertheless, during the night two machine guns were brought up, and the party established itself firmly inside the Russian blindage.† There it remained, but the most strenuous efforts to advance were

Attack on 203 Metre Hill.

* For a description of the Russian position see Chapter XX and Map III/5. The upper entanglement on 203 Metre Hill, however, was not constructed until after the assault in September.

† This dark blindage, or covered trench, gave rise to a report, widely believed among the Japanese, to the effect that a tunnel had been driven through the hill.

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unavailing, since any attempt at a forward movement was promptly checked by Russian machine guns. For two days the dwindling party heroically maintained itself in the Russian trench, subsisting on the emergency ration carried by the men; but on the 22nd, the position became desperate, for the Japanese reserves in the ravine to the south-west of 203 Metre Hill were discovered by the Russians, and were driven out with heavy loss by field artillery near Pigeon Bay. The end was soon to come.

During the following night a party of Russian volunteers crept out of their trenches and succeeded in rolling a 15lb. charge of guncotton into the trench occupied by the Japanese. The explosion which followed blew to fragments a large part of the blindage and killed many of the occupants. The survivors broke, and after being pursued for a short distance with the bayonet, were caught by rifle fire as they struggled back through the entanglement. The two machine guns were left behind.

This experience, terrible though it was, did not prevent the Japanese from making two further attempts to capture the hill during the night, but with daylight on the 23rd all hope of success was abandoned, and the besiegers commenced regular approaches against it. Profiting by their success at 203 Metre Hill, the Russians reoccupied the low hill south-west of Fan-chia-tun, and were not driven from it until the 2nd October, from which date it formed part of the Japanese outpost line.

The determination both of the attack and of the defence was exemplary. The deciding factor was the Russian field artillery, which from the neighbourhood of Pigeon Bay was able to sweep the open ground over which the attackers were forced to advance. Only a very small number of Japanese could find cover on the hill-side, whereas the defenders were admirably sheltered from the Japanese artillery, which at this date included no piece capable of penetrating the Russian blindages. A share of the credit for the successful defence is, however, due to the Russian machine guns, of which the positions were most wisely chosen.

The Japanese casualties amounted to about two thousand five hundred, of which nearly half were caused by artillery fire. The Russian casualties are unknown, but were not heavy.

Observations.

With the failure to capture 203 Metre Hill, there was again a lull in the fighting and the hardly tried Japanese infantry had time to gather strength for the further demands which were to be made upon it. During the last month much had been accomplished, for although in itself the Waterworks Redoubt was of no value to the Japanese, and was merely destroyed and abandoned, important developments resulted from its capture as well as from the seizure of the Temple Redoubts and of Namako Yama.

The Railway Redoubt* fell without fighting, as did the trenches connecting it with the Waterworks Redoubt. The Japanese thus secured possession of the waterworks, and the

* See Map III/4.

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Russians, fearing lest the enemy might poison the water—a totally unjustified suspicion—closed their end of the pipe line at once, and had recourse to wells which gave a sufficient if not over-abundant supply. The Japanese cut off the water, but did not damage the pipe line, because they expected to need it after the fall of the fortress.

More important than the capture of the waterworks, was the fact that the Japanese were now in a position to push their approaches against Forts Erh-lung and Sung-shu. The 9th Division had for some time been busy with trenches between Pa-li-chuang and Lung-yen, and at once extended these across the railway and threatened the defences of Erh-lung Hill. But the Russians still retained Bridge No. 5 and the railway to the westward, so that the 1st Division were for the time forced to content themselves with constructing siege approaches from Shui-shih-ying to Hou-pa-li-chuang.

Lastly, Namako Yama proved to be of great value as an observing station for the siege artillery, and the situation of the Russian fleet became serious. This was bad enough; but towards the end of the month news of General Kuropatkin's retirement from Liao-yang reached the fortress, and produced a most depressing effect upon the spirits of the garrison, for the chances of relief were reduced to vanishing point.

Thus in spite of one reverse General Nogi was considerably nearer his goal than at the end of August, but as is often the case in war, his men had suffered more from disease than from the bullets of the enemy.

Throughout September, the besiegers lost far more men from sickness than did the Russians. The sanitation of the Japanese camps was primitive in the extreme, the hospitals being no exception to the general rule. Flies swarmed everywhere, both inside and outside the fortress. The besiegers were, for the sake of concealment, encamped in depressions down which flowed numerous small streams, with the result that every source of water supply was polluted. Stretchers were rarely cleaned, and could be seen daily outside the dressing stations crusted with dried blood and swarming with flies. The approximate number of Japanese incapacitated by sickness was during July 5,000, during August 10,000, and during September 5,000; out of these 20,000 cases, some 16,000 were beri-beri; the remainder were chiefly typhoid and dysentery.

The Japanese at the end of September.

In spite of their insanitary surroundings, the Japanese soldiers kept their persons and clothing scrupulously clean, but when slightly wounded they wore their bloodstained clothing as long as possible.* The hot bath which during peace time is the daily habit of every Japanese, was indulged in at every opportunity. While the weather remained hot, the majority of the men were in

* This was no doubt due to the principles of wound treatment adopted by the Japanese, viz., that wounds were to be interfered with as little as possible until they could be thoroughly examined in the field hospital.

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the habit of washing their bodies daily in cold water. Later in the siege the weather became too cold for this practice, and bathing had to be restricted to the rare occasions when a tub of hot water was available.

Meanwhile, in response to General Nogi's request for heavier artillery, a number of 11-inch howitzers were despatched from Japan. These formed a portion of the coast-defence armament of the country, but, as it was now clear that no serious naval attack need be feared on the Japanese coast, many of the batteries could be disarmed without risk. By the end of September, six 11-inch howitzers were mounted in three batteries of two guns each, at O, R, and W (Map IH/6).

The strength of the attack had been further increased by the arrival, early in the month, of two additional 4·7-inch naval guns which were mounted just south of Tien-han-kou,* and later on by two 6-inch naval guns of 30 calibres which were placed at D. Narrow-gauge tramways were laid to the 11-inch and 6-inch batteries. Rumours of the arrival of heavy siege guns were heard in Port Arthur, and a reward was offered for information as to the position in which they were mounted, but when fire was opened on the 1st October from the 11-inch howitzers, the first shells seem to have taken the garrison by surprise. After the capture of Namako Yama the Japanese had no further need for their balloon which was despatched to the north.

Inside the fortress certain Russian officers extemporized hot baths for their men, finding that their trouble was amply repaid by the improvement in health and spirits. It was impossible, however, to provide bathing facilities for more than a small proportion of the troops. By the middle of September, cattle had become very scarce and beef was being supplemented by horse and donkey flesh, while before the end of the month, vegetables were running short; although liquor of all kinds was to be had in abundance, its issue to the troops was strictly limited. Sea fish, which were caught by both Russians and Chinese, furnished a valuable addition to the rations.

The Russians at the end of September.

* These guns are not shown on any map. They were moved during December to the col between Akasaka Yama and 203 Metre Hill.

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CHAPTER XVIII.

THE SECOND GENERAL ASSAULT. MAPS III/2, III/4 AND III/6.

Situation.

WITH the arrival of the Japanese 11-inch howitzers at the end of September, the situation of the Russians changed considerably for the worse. The first shells were fired into the Chi-kuan works, one of them penetrating the concrete of the fort casemates and mortally wounding several men. The news of this fresh danger spread rapidly throughout the fortress, and it became necessary to strengthen much of the cover which had hitherto been considered bombproof. Although from the very first many of the shells failed to burst, the mere force of their impact was sufficient to wreck any house which they struck. Moreover, although the observer on Namako Yama could not see the whole of the harbour he was able to direct fire upon the warships sufficiently accurately to cause much damage and annoyance. By collecting in the basin and as close as possible to the south end of Quail Hill the ships managed to escape observation fairly well, and the practice of the Japanese artillery varied greatly. On the 2nd October, the *Peresvyet* alone was hit more than twelve times, whereas on the 4th, during four hours' bombardment, only one shell took effect, and that on the hospital ship *Mongolia*. On the 7th, the *Poltava* was set on fire. On the 8th, the *Retvizan* went out into the roadstead, but was promptly attacked by torpedo boats, and decided that it would be safer to return and take the risk of being struck by a shell inside. On the 16th, the *Bayan* went out and took cover close under Golden Hill, but on the very next day three shells found her and did serious damage. Almost daily some injury was inflicted on one or other of the vessels in the harbour, and much damage was done to buildings, especially in the Old Town, which lay more or less in the line of fire.

The Russians were unable to make any effective reply. They possessed fairly accurate maps, which were divided into squares so that fire from both ships and batteries could be directed upon any particular point. But since the besiegers were mostly firing from concealed positions, and were using smokeless powder, the results of the Russian practice were not proportionate to the expenditure of ammunition, scarcely any damage being done to the Japanese heavy guns.* Moreover the defenders were already

* Later in the siege the Japanese, finding that the 11-inch howitzers were getting badly eroded, took to using black powder as doing less damage to the rifling. But by that time concealment had ceased to be of vital importance, since the position of the guns must have been well known and the Russian ammunition had run short.

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suffering from defects in both the quantity and the quality of their ammunition; time fuzes also were so scarce that shrapnel could only be used against specially favourable targets, and an ever-increasing proportion of shells failed to explode. On the other hand, great annoyance was caused in the Old Town by the premature bursting of Russian shells. General Stessel went so far as to publish in orders that, on a certain day, nobody had been injured by the Japanese projectiles whereas one or two men had been killed by Russian shells from Golden Hill. On more than one occasion also the chase was blown bodily off a Russian 6-inch gun, either owing to defective metal or to a premature burst in the bore.

With the advent of colder weather the number of sick grew less among the Japanese. Changes in diet, such as an increase in the allowance of meat and an admixture of barley with the rice, checked to some extent the ravages of beri-beri. More care was taken about sanitation, the flies were dying, and the drying up of the streams, although throwing more labour on the troops, enabled the supply of drinking water to be more carefully supervised. Inside the fortress, however, sickness now began to be severely felt.

Reinforcements kept the Japanese army up to its full strength, but no increase occurred during the month except the following additions to the artillery:—

12 11-inch howitzers (mounted in three batteries of four guns each at B, T, and P, Map III/6).
4 6-inch mortars.
2 6-inch naval guns of 30 calibres (mounted at D, Map III/6).
2 12-pr. naval guns (one of which replaced a gun which had been hit by the enemy's fire).

At the beginning of October saps were being pushed from the low ground against all the Russian works on the front of attack, from Chi-kuan Battery to Fort Erh-lung inclusive.

The allotment of works was:—

To the 11th Division—Chi-kuan Battery, Kobu, Q, and Fort Chi-kuan.
To the 9th Division—P, the Chinese Wall opposite East and West Pan-lung, G, and Fort Erh-lung.

The 1st Division was pushing down from Shui-shih-ying towards Hou-pa-li-chuang and the railway. It was also making a quite independent attack against 203 Metre Hill from Ridge 590 (see Chapter XX).

Narrative of the operations.

Meanwhile small sorties constantly took place, but on the night of the 2nd–3rd two of rather greater importance were made, one from Fort Chi-kuan and one near Pigeon Bay. During these early days of October a Russian four-pounder on Signal Hill was causing much annoyance to the Japanese by firing on the approaches to Ta-ku Shan and Hsiao-ku Shan, and on the beach of Takhe Bay. Screens were built which concealed the roads to

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some extent, but it was decided that the hill must be taken and the gun destroyed. At 9 p.m. on the 4th, the Russian picquets at Signal Hill seeing a strong party of Japanese approaching along the beach, fell back to their main body, which then opened a hot fire upon the enemy. In the meantime one or two companies of Japanese were advancing from the north-west, and the Russians on the hill were so much occupied with the party on the beach, that they were only warned of this attack on their left flank by the shouts of their sentries who were falling back before the Japanese charge. The choice lay between surrender and cutting a way out with the bayonet. Greatly to their credit the Russians adopted the second course, and not only carried it out but also succeeded in taking away with them the breech of their gun. The Japanese did not attempt to establish themselves on the captured position, since it was too much isolated, but on being seriously attacked the next morning by a company of sailors they evacuated the hill, having destroyed a machine gun as well as the four-pounder. Signal Hill then remained in Russian hands until the end of the siege.*

The next few days were uneventful, but the 9th Division was pushing steadily forward towards Fort Erh-lung and, on the 7th October, the trench marked Y on Map III/4, one hundred and thirty yards from the nearest Russian line, formed the advanced parallel. Part of this trench had been built by the Russians, and on that night they recaptured it, turned the parapet round, and held it, thereby stopping any advance and forcing the Japanese to retake their own parallel. While the Russians were in possession of Y, the Japanese fell back to X, which then formed their advanced parallel.

Until 3 p.m. on the 9th everything appeared to be exactly as usual, the naval guns and 11-inch howitzers firing an occasional indirect shot at the ships or dockyard, while a constant dropping fire was kept up by riflemen in the trenches on both sides. At that moment, however, the Japanese suddenly opened fire with every field and mountain gun that could be brought to bear on the Erh-lung neighbourhood, their target being the Russian trenches on Erh-lung Hill, the fort itself, G, the valley between the fort and G, and the Chinese Wall in the vicinity; in other words, those positions whence support could be given to the garrison of Y. Several of the lighter siege pieces also opened fire. At the first sound of the guns two parties of Japanese, each fifty to eighty strong, leapt, one from the centre and one from the eastern end of the trench X, and rushed in a crowd across the eighty yards of open ground which lay between them and the Russians. To cross this space took the whole assaulting force perhaps twenty seconds; yet before the leaders were half-way to their goal, a Russian machine gun in G was already in action. Nevertheless the trench was reached with the loss of only one man, and even he was pulled in by his comrades. Once that point was attained danger was over, for the defenders had run

* See p. 123.

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out into the watercourse at the eastern end before the attack arrived.

This small engagement was remarkable in two ways: first, as being the only occasion on which, during daylight, the Japanese dispensed with preliminary bombardment and relied solely on surprise;* secondly, as an example of the excellent lookout kept by the Russians, not fifteen seconds elapsing after the commencement of the Japanese artillery fire, before the Russian machine gun opened. The operation further revealed the fact that the Japanese mountain guns were being pushed in to very short ranges; for a certain number of batteries fired from concealed emplacements close to the railway, in the vicinity of Hou-pa-li-chuang, their presence being disclosed by the clouds of dust raised on discharge. These guns were so placed as to enfilade the eastern end of the lower Russian trench on Erh-lung Hill, this being the point whence support to Y would most naturally be expected.

The Russians lost eighteen killed and sixty wounded; the Japanese losses were insignificant.

On the following afternoon, the two 11-inch howitzers at O (Map III/6) were ordered to bombard Chi-kuan Battery, which, with its 6-inch guns, flanked the advanced parallel against Fort Chi-kuan. where the Japanese trenches were by this time only forty yards from the counterscarp. The north-western gun of Chi-kuan Battery was firing on the Japanese trenches when the bombardment opened, and kept up its fire for some little time, but eventually ceased. From this time forward a good deal of attention was paid to keeping down the fire of Chi-kuan Battery.

Further to the west the 1st Division was also closing in and, on the night of the 11th–12th October, a party from the 2nd Brigade crossed the railway, ejected the Russians from the trench Z (Map III/4) on Sung-shu Hill, and established themselves there with the object of pushing siege works against the fort. The Russians still clung to a breastwork under the railway bridge (No. 5 on Map III/4) to which there was good communication down the valley between Erh-lung and Sung-shu Hills, and did not abandon it until the 26th October, on which date the Japanese established themselves on the spur between the bridge and Fort Erh-lung.†

On the 16th October, in support of an attack on G, the 11-inch howitzers were for the first time turned against provisional works. The lower trench on Erh-lung Hill was to be assaulted at the same time, but the trenches forming the defences of G were the more formidable, being in many places provided with overhead cover; moreover, they flanked the face of Erh-lung Hill. The south-eastern end of the Erh-lung trench was a cul de sac, and for the last two hundred and fifty yards of its length could be enfiladed

* No bombardment prepared the final assaults on forts Chi-kuan, Erh-lung, and Sung-shu, but in each case the attack was preceded by the explosion of mines. See Chapters XXII, XXIII, and XXIV.

† It was from this bridge that the sortie was made which, on the 20th August, retook the Waterworks Redoubt; possibly the idea of another sortie had not been relinquished.

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from Hou-pa-li-chuang; consequently, no such severe bombardment was directed against it as was sustained by the defences at G.

Capture of G.

At 1.40 p.m., a single 11-inch shell from O pitched a hundred yards beyond G, the splinters raising spurts of dust from Fort Erh-lung and from the hills to the south-west. A second shell was better placed, and before long excellent practice was being made against the work, several shells falling right into the trenches and scattering the overhead cover in all directions. But the bombardment was by no means confined to the 11-inch howitzers. Many of the lighter siege pieces were used, both against G and against the Erh-lung trench, while wooden guns* threw numbers of their bombs against the Russian works, the explosions raising immense clouds of dust, but doing little damage. Now and then men could be seen scrambling out of the ruins and diving again into cover.

After 3 p.m., the bombardment grew more rapid, the field and mountain artillery opening with shrapnel upon the works, which by that time were showing many signs of damage. Every gun in action appeared to be firing its fastest. The supporting works were heavily shelled, especially the trench at the edge of the Erh-lung glacis, the fort itself, H Battery, and the Chinese Wall. Fort Sung-shu, being more or less round a corner, would be able to offer indirect support only, and was not heavily bombarded. The Russian reply, although at times fairly heavy, was ill-regulated, and as usual many shells failed to burst.

At 4.30 p.m., the Japanese fire suddenly slackened, but did not entirely cease, and an occasional shell still burst in the trenches at G. Then a company of the 35th Regiment leapt from the advanced parallel, and advanced at a steady pace towards the work, headed by an officer carrying a large national flag. The slope up which the Japanese advanced was exposed to the fire only of G itself, and of the lower Erh-lung trench. No casualties were incurred by the assailants before entering G, since the defenders of the work had been driven out by the bombardment, while those of the Erh-lung trench were fully occupied with their own affairs. On arrival, however, they were received with a salvo of common shell, evidently from concealed Russian guns which had been laid in readiness, but the fire from these soon slackened, and the Japanese were left in undisputed possession, although the Russians still held the trenches in rear of the knoll. Many Japanese did not enter the work, but lay down outside it under cover of the parapet.

Capture of advanced Erh-lung trench.

The attack on the Erh-lung trench did not exactly coincide with that on G, but took place shortly before 4.55 p.m. when about a hundred Japanese charged out from the advanced parallel. Their artillery fire had not entirely ceased, and two men fell on the way, apparently knocked over by their own shells. Fifty Russians jumped out as the attack started, and began to run uphill towards the fort. At this moment, fire was opened from

* See Appendix K.

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and the defenders were only compelled to evacuate the western portion by the fall of the fort at the end of December.

Capture of Erh-lung glacis trench.

A few seconds after the attack on Sung-shu hill, a company from the 18th Brigade left the advanced parallel before Erh-lung, and attacked the salient of the glacis trench. The hill is composed of rock, which here comes to the surface and forms a rather pronounced spur running slightly east of north. Keeping to the westward of this spur, the assailants were in a depression in which they were concealed from all the defenders except those of the glacis trench. The Japanese artillery maintained its fire until the latest possible moment, some shells even bursting among the assaulting infantry. But the result justified the means, for the stormers reached their objective without losing a man; and a second company, following a line slightly to the westward of the first, also crossed the open ground without loss.

Inside the trench hand to hand fighting occurred, and supports were moved up from the Japanese advanced parallel; they, however, did not cross the parapet, but took cover on the outer slope. The flanks were enfiladed by Russian machine guns in the works behind the fort, and the Japanese had for the time to content themselves with making good their foothold in the centre. A few skirmishers, taking advantage of the cover afforded by shell craters on the glacis, worked their way up to the edge of the ditch and managed to throw up some light breastworks, from which they were never dislodged. This slight protection was eventually improved into the advanced parallel whence the capture of the fort was finally effected. As soon as the defenders had been ejected from the centre of the trench, the ground between the glacis and the siege works became absolutely dead, and the Japanese at once began to dig two approaches from the advanced parallel. The working parties suffered some loss from the indirect fire of the Russian artillery, but for this day the total casualties of the 9th Division did not exceed three hundred. Moreover, their troops in G profited by the attacks elsewhere, and ejected the few Russians who had been clinging to the rear of the knoll since the 16th October.

Weak counter-attacks were made during the night both at Erh-lung and Sung-shu, but without success.

On the 27th and 28th October, no infantry fighting occurred, but the 11-inch howitzers maintained the bombardment day and night, assisted at intervals by other pieces. During the hours of darkness, however, the rate of fire was very slow.

By the 27th, the Russians found that the three forts on the front of attack were beginning to sustain serious damage. In each of them guns had been put out of action, and Fort Chi-kuan had suffered heavily from two explosions which had been caused by the enemy's guns. The seamen gunners from the fleet were of great assistance in repairing and remounting guns, for the numbers of the artillery were so greatly reduced by their losses that they were no longer able to keep pace with their task. It is a remarkable fact that many of the troops preferred to labour by day,

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under a heavy fire, rather than to profit by the slackening of the bombardment at night. Their reason, they said, was that by day they could see their own work and the shells which burst around them; at night they found the strain far more trying. All this time the siege works were being pressed forward, and it was realized by the defenders that, if they allowed the Japanese to establish themselves on the glacis of the forts, it would not be long before the counterscarp galleries would be blown in, the ditches dead, and the forts themselves open to assault. Already the galleries of Fort Chi-kuan were partly in Japanese hands, and if those of Forts Erh-lung and Sung-shu were to be saved desperate measures must be taken.

In these circumstances the Russians decided, on the night of the 28th, to make simultaneous sorties from the two threatened forts with a view to driving the Japanese from the trenches which they had taken on the 26th.

The sortie at Erh-lung failed to accomplish anything and needs no description; but that at Sung-shu, although ill-conceived and unsupported, came very near to being an important success.

Counter-attack on Sung-shu advanced trench.

The Japanese were still in possession only of the northern salient of the Sung-shu trench, but it now formed part of their siege works, and from it a zigzag approach was being pushed towards the fort. Both flanks were still held by companies of Siberian Rifles.

About midnight a company of Russian sailors, one hundred and eighty-six strong, went down to the eastern flank. Climbing out of the trench, they rushed with cheers upon the Japanese and took them in flank, but were then met by a heavy fire from the zigzags; the Russian commander was killed and, being unsupported, his men, after sustaining very severe losses, fell back to the flank whence they had started. The Japanese reported that they had been driven back by the Russians to the position which they had occupied prior to the attack of the 26th October, and that they did not reoccupy the Russian trench until 2 p.m. on the 29th. Evidently, therefore, both sides fell back, and the disputed trench must have remained empty during the morning of the 29th.

Had this sortie been made simultaneously from both flanks of Sung-shu, the defenders of the zigzags would have found themselves in so hopeless a position that the Russians must certainly have reoccupied their trench with small loss; the siege works could then have been filled in, and the attack on Fort Sung-shu might have been set back for some time. The Japanese would, at the least, have had to face the dangers of another frontal attack. Indeed, even had this isolated attack been supported some material advantage would almost certainly have been gained, but scarcity of men was probably the reason why sorties were invariably made by parties so weak that they could accomplish nothing.

With the capture of the advanced trenches the preliminary operations had been brought to a successful conclusion, and everything was now ready for the second general assault on the

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front of attack. As before, the principal operation was preceded by a diversion in the west. There, on the night of the 29th, a strong forward movement was made by the besiegers near Pigeon Bay, Solovev Hill being occupied for a time, although it was retaken later by the Russians. But the real work was to follow.

About 9 a.m. on the 30th, a few siege guns opened, the fire being at first very slow, but soon after 11 a.m. the bombardment grew more general and rapid, and gradually it became apparent that the works in the Chi-kuan neighbourhood were receiving most attention. The wooden guns all along the line fired heavily, but their practice was very inaccurate.

Second general assault.

The reply of the Russians was wild and irregular, although they had ascertained the position of many of the Japanese batteries. The warships in the harbour joined in the contest, using indirect fire. As usual, the quality of the Russian ammunition was bad; many shells failed to burst, or by the irregular noise of their flight showed that their manufacture had been faulty. Shrapnel was reserved until the infantry should assault.

From 12.30 to 1 p.m. every Japanese gun fired its fastest. Shrapnel began to burst along the line, and almost immediately a hot rifle fire was opened from the trenches upon the Russian loop-holes. Then came a perceptible diminution in the Japanese artillery fire; but five minutes later, when the first storming party left the trenches, shells were still falling everywhere in the front line of Russian works.

The stormers on Q seem to have started first, but assaults were launched almost simultaneously against Chi-kuan Battery, Kobu, Q, Fort Chi-kuan, P, Fort Erh-lung, and Fort Sung-shu. The distance between the opposing forces was nowhere greater than a hundred and sixty-five yards, and was in some cases much less; but the Russian armament for the close defence was evidently ready laid, with the gunners waiting to pull the lanyards, for the assaulting columns were met by a storm of fire from every class of weapon, of which not the least effective were smooth bores firing case shot. The reports merged into one continuous roar and, seen intermittently through the dust raised by the bullets, the stormers looked like men struggling in rough water. The day was fine and bright and, when the first blast of fire had died away, the light north-westerly breeze blew the smoke and dust to one side, allowing the whole scene again to become visible. So complete had the Russian preparations been that many Japanese had fallen in the act of climbing out of the trenches, and everywhere the slopes were covered with prostrate forms, among which the survivors were still running towards the Russian works, while here and there small parties of supports were starting to their assistance.

Failure to capture any particular point in the defences would allow its garrison to direct a flanking fire against the assailants of the neighbouring works, and it was therefore imperative that the whole Russian line should be carried simultaneously. But the

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fire of the defence was so hot that each attack found more to do than it could manage, and the engagement resolved itself into a number of independent fights, each of which can be considered by itself.

Chi-kuan Battery.

Taking the attacks in order from the left, about one battalion took part in the assault of the Chi-kuan Battery. There, the saps had penetrated the entanglements, and only forty yards of open ground separated the combatants. But in crossing this short space men fell by dozens. Undaunted by their losses, the stormers reached the lower Russian trench, and while some entered and endeavoured to work along it to either flank, the majority crossed and made straight for the trench and battery on the top of the hill. No order was preserved in the advance, which took the shape of a triangular mass; the apex being formed by the leaders, with whom went the regimental colour, while the remainder of the column straggled out fanwise into a wider formation. They were met by a devastating fire. The Russians in the upper trench leaned over the parapet in order to empty their magazines into the advancing crowd. Their heads and shoulders were clearly visible from the Japanese artillery positions, but the guns could not fire without danger to the attacking infantry. Meanwhile a machine gun in the sangar* kept up an incessant fire, and a storm of shrapnel from Chi-kuan South-East struck the attack in flank; one shell alone brought down a dozen men, including the officer carrying the regimental colour. In five minutes all was over. A couple of men carrying large national flags had struggled upward to within some forty yards of the Russians before they fell, and perhaps twenty men had fought their way into the upper trench. The remainder of the column lay prone upon the hill-side, most of the men being killed or wounded, although some were taking cover in shell craters. Before long the few survivors rose to their feet and ran back to their own lines, leaving to its fate the small party which had penetrated into the upper trench. There, eight or nine men were still alive. One by one, they attempted to get back to their comrades, but, with a solitary exception, were shot dead.

Meanwhile, the Japanese in the lower trench found their position rapidly becoming untenable. Although too deep to be seen into from the upper trench, the lower trench was so traced as to be everywhere enfiladed by some portion or another of the adjoining defences. Men could only move along it in single file; and, while some of the Russians, from behind its traverses, fired at any man who dared to attempt the task, others pelted the Japanese with hand-grenades and with blazing bundles of oil-soaked rag. Indeed, the assailants found themselves in a trap whence it was no easy matter to escape, even for an unwounded man, and when finally the woodwork took fire, converting portions of the trench into roaring furnaces, very few of the original stormers escaped to tell their tale. By 3.15 p.m., the whole hill was again

* See Map III/4. A sangar is a breastwork built of stone.

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firmly held by the defence, the attack was abandoned, and bombardment was recommenced.

Undoubtedly the strength of this position came as a surprise to the Japanese, and the attack was not sufficiently carefully prepared. The lower trench was not heavily shelled in the preliminary bombardment, nor were efficient measures taken to keep down the fire from Chi-kuan South-East, the sangar, and the upper trench.

In front of Kobu, the difficulties encountered proved far less formidable, for although the distance separating Japanese and Russians was about a hundred and twenty-five yards, gaps had already been made in the entanglements, and a weak assaulting column occupied the work without much loss. Apparently the defenders had retired, but none the less the Japanese were unable to maintain themselves on the crest of the knoll, since they came under fire from the Russian works beyond. They therefore contented themselves with holding the trench on the north-east slope. No attempt was made to eject them, and during the night covered communication was made with the siege trenches. After that it was not long before the Japanese had a secure grip of the whole work.

Kobu.

West of Kobu the next work attacked was that marked Q, which was originally a lunette in a branch of the old Chinese Wall. By the end of October the Russians had loopholed the crest for rifle fire, and had mounted guns of various calibres, some of the emplacements being blinded. Cover for the garrison was provided in strong bombproofs, capable of resisting anything short of an 11-inch howitzer shell. Deep and heavily traversed trenches provided more cover, and served as communications in all directions. The work was completely open to the rear, and was commanded both from the Chinese Wall and from a line of trenches on the ridge above. Since the occupants of Q could absolutely dominate every approach to Fort Chi-kuan from Port Arthur, its capture was very desirable for the Japanese. Without holding Q they might still take the fort in the ordinary course of events; but once they were established there the fall of the fort would be a question only of days.

Q.

No less than one hundred and sixty yards of open slope had to be crossed by the Japanese as they advanced, but the entanglement lay quite close to the parapet and had suffered severely from bombardment. Possibly it had never been thoroughly repaired after the attack in August.

About half a battalion formed the assaulting column. Headed by the regimental colour, the stormers rushed up the slope; no formation was maintained, each individual seemed to climb out of the trenches when and where he could. Many men fell, but a few managed to scale the parapet. Some of the defenders ran out at the back as the stormers entered, but most of the garrison held their ground, and none of the Japanese left the work alive. The majority of the assaulting column lay in a compact mass, close under the parapet, in the depression to the north where the ground was practically dead. One man advanced

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and from a portable fire engine strapped to his back discharged a stream of petroleum on to the defences, of which the north shoulder quickly took fire, burning fiercely for some time. The conflagration, however, was not sufficiently wide-spread to make the work untenable, and after a period of inaction the Japanese reopened with shrapnel; but even this did not prevent certain of the defenders from standing on the parapet to discharge their rifles into the mass of their assailants. Occasionally a single Japanese would dash down the hill, but very few reached the trenches and, after the first rush had been checked, no man attempted to go up.

At 3.15 p.m., when it was realized that the assault was doomed to failure, the bombardment was resumed. At 4.40, an explosion occurred in the southern shoulder of Q, but the situation remained unaltered until nightfall, when, under cover of darkness, the few surviving Japanese were withdrawn to their trenches, leaving the work entirely in Russian hands.

The repulse was due partly to the direct fire of Q itself, and partly to the cross fire from Fort Chi-kuan, and from the gorge of Chi-kuan Battery. But an isolated success at this point would have been of little value, for commanded as it was from flanks and rear, it would have been impossible for the attackers to maintain their hold, even if they succeeded in driving out the garrison. Not unnaturally, this fact coupled with the remarkably successful defence, has been used as an argument against having closed works in the front line of a fortress.

The fourth attack in the series was that on Fort Chi-kuan where on this date, the 30th October, the Japanese were already established above the counterscarp. A few of the attackers succeeded, about 1.30 p.m., in crossing the ditch and climbing the parapet of the northern flank, where they found some slight cover in shell craters. But the Russians had not yet been completely ejected from P, to the westward, and from this work every man of the small party on the parapet was shot. The attempt was but an exhibition of hopeless gallantry, for the number of the attackers was too small to admit of their achieving any result. Their bodies lay on the parapet until a month later, when they were buried by the explosion of a mine.*

Fort Chi-kuan.

Two hundred yards farther to the west stood the work at P, which was of great importance since it commanded a view of the gorge casemates in Fort Chi-kuan. The ground in front of P was open but, since East Pan-lung had been lost, it was no longer thoroughly swept by Russian fire, except from the work itself. Moreover a well-defined, though narrow, gap had already been made in the entanglement, and a storming column of two companies from the 35th Regiment crossed

P.

* To some eyewitnesses it appeared as though many of the Japanese were killed by fire from the counterscarp galleries, but it has been stated, on good authority, that this was not the case. Indeed, the whole question of the value of counterscarp galleries has been much disputed.

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the one hundred and sixty-five yards of exposed ground and occupied the lower trench almost without loss. However, the communicating trenches on the flanks, and the battery on the crest, had the support of the works in rear, and the Japanese found some difficulty in maintaining their position against repeated counter-attacks. At 3.30 p.m., a number of them left the work and attempted to retire to their own trenches, but the reserves in the advanced parallel were instantly sent up the hill at a run, and met the retreating troops in the gap of the entanglement. Then ensued a struggle which resulted in the whole mass ascending the hill and again entering the work. Although unable to make any further progress, the Japanese held their own until about 10.30 p.m., when they were driven back to their own trenches. Even then the fighting was not over, for realizing that the general assault was likely to end in total failure, and that desperate measures were necessary, Major-General Ichinohe, commander of the 6th Brigade, to which the 35th Regiment belonged, placed himself at the head of a fresh storming column and succeeded about 11 p.m. in occupying the whole work. Covered communication with the siege trenches was at once established, and the Japanese were soon in undisputed possession of the spur. In recognition of this action the Japanese changed the name "P" to "Fort Ichinohe."

Still further westward, the Japanese in front of Fort Erh-lung were already in possession of the glacis up to the edge of the ditch. An attempt to cross at the north-western shoulder, where the depth was about thirty feet, ended in disastrous failure, for the scaling ladders were not long enough, and the ditch proved to be a trap whence retreat was impossible, but which afforded no shelter from the fire of neighbouring works. A few men managed to climb the parapet, and were there shot down. A battalion of the 7th Regiment should have assaulted the eastern flank and gorge, but was forced to remain in the ravine between Fort Erh-lung and G, since no troops could ascend the slope of Erh-lung Hill under the flanking fire from the Chinese Wall.

Fort Erh-lung.

At nightfall the Japanese were in the position which they had occupied before the assault, but had not gained a single foot.

The most westerly of the attacks was that which was delivered by the 1st Division against Fort Sung-shu, where the Japanese had advanced but a very short distance beyond the trench captured on the 26th October. This trench now formed their advanced parallel, leaving nearly two hundred yards of glacis and a wire entanglement, in which a narrow gap had already been made, to be crossed before the counterscarp could be reached. A storming column, from the 2nd Brigade, some two hundred strong and carrying three scaling ladders, reached the counterscarp with a loss of thirty men; of the survivors some tried to cross the ditch, while others established themselves as supports on the crest of the glacis, making hasty trenches and availing themselves of the cover afforded by shell craters. The first column was quickly followed by a second of

Fort Sung-shu.

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equal strength, and half an hour later by a third of about a hundred men; both of these parties also lost about thirty men in crossing the open ground. But their difficulties had only just begun, and those who attempted to cross the ditch were without exception killed. Throughout the afternoon the besiegers kept the interior of the work under constant artillery fire, with the result that at 3.30 p.m. an explosion occurred in the salient, and at 4 o'clock another took place inside the fort, dense volumes of smoke pouring out for more than an hour. Still the defence was unshaken, and a hot musketry fire was kept up from the parapet until dark. From time to time a few of the Japanese attempted to get back to their advanced parallel, but almost invariably failed.

Possibly a vigorous counter-attack, delivered under cover of darkness round the western flank of the fort, would have driven the assailants back to their own lines; but the defenders failed to take advantage of their opportunity, and by the next morning communication with the siege trenches had been opened, and the Japanese were securely established on the crest of the glacis.

Towards the close of day the Japanese gradually relaxed their efforts all along the line, and as night fell the firing slowly died away, for both sides were exhausted. Nevertheless the Russians lost no time in repairing the damaged parapets and, by the morning of the 31st, their position was very nearly as strong as on the 30th. But, in addition to the glacis of Fort Sung-shu, both P and Kobu were now in Japanese hands, and Fort Chi-kuan being deprived of all support from the flanks the 11th Division made another attempt to capture it.

A bombardment from the siege guns was begun about 1 p.m. against the fort and the works in its vicinity. At 3.25 p.m., the Japanese field and mountain artillery opened with shrapnel, the troops in the trenches over the counterscarp were withdrawn to a short distance, and a tremendous explosion occurred in the ditch. No assault followed, and at 4.20 p.m. another explosion took place, whereupon a storming party, leaping into the ditch under cover of the dust, attempted to carry the fort by assault. The parapet, however, was found to be commanded by the Russian works on the hills in rear, and the attempt ended in failure.

Renewed attack on Fort Chi-kuan.

All that night the Russians in Fort Chi-kuan remained on the alert, firing magnesium rockets whenever they heard sounds of movement, and fully expecting a renewal of the attack. But with this final repulse the second general assault on Port Arthur came to an end after six days of almost continual fighting, during which the Japanese had suffered a loss of 124 officers and 3,611 men.* In spite of the most desperate courage on the part of the Japanese troops, the attacks on the three permanent works had ended in utter failure. As regards the provisional fortifications.

* The Japanese casualties from the 26th to 31st October inclusive, are given in Appendix D.

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G, P, and Kobu, three works of which the foregrounds were not under a severe cross fire, had been carried with a difficulty which varied according to the battering which the work had sustained, and to the amount of support which it derived from its neighbours. On the other hand, it had been found impossible to take Chi-kuan Battery and Q, where the ground was thoroughly flanked by other fortifications and the assaulting troops had been unable to find cover inside the works from the fire of the defence.

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CHAPTER XIX.

THIRD GENERAL ASSAULT. MAPS III/2, III/4 AND III/6.

Situation.

BY the beginning of November the Japanese had established themselves above the counterscarps of the three forts Chi-kuan, Erh-lung, and Sung-shu, but the ditches were not yet dead, (*i.e.*, secure from the fire of the defence). They were in possession of all the intermediate spurs, viz.:— Kobu, P, East and West Pan-lung, and G; but they had failed to make an impression on the main line at Q, nor had they succeeded in taking the lower trench of Chi-kuan Battery.

At these points the distances now separating the combatants were:—

Chi-kuan Battery	40 yds.	(from lower trench).
Q	160 „	„ „ „
P	140 „	(from Chinese Wall).
East Pan-lung ...	60 „	„ „
West Pan-lung...	150 „	„ „
G	200 „	„ „

Siege works were also being pushed against 203 Metre Hill.

Before Chi-kuan Battery the ground was found to be so hard that it was impossible to make any advance, and at that point, therefore, the Japanese contented themselves with holding their ground. Elsewhere steady progress was made. Against the Chinese Wall trenches were pushed out from P and from the two Pan-lungs; another trench was worked round the eastern flank of Fort Chi-kuan, and yet others up the three ravines separating the spurs on which stood the two Pan-lungs, G, and Fort Erh-lung. A connexion was made from P to the glacis of Fort Chi-kuan; and two approaches were worked up the slope towards Q, one up the spur, the other up the valley to the south-east of it. Communications throughout the trenches in rear were constantly improved.

During November, P, which had been captured and held by the 9th Division, was transferred to the custody of the 11th, as it was considered that the former division was doing more than its fair share of the work.

Towards the middle of the month additional troops for the besieging army began to arrive. From the north came:—

1 sapper company of the Guard, to be attached to the 1st Division.

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1 sapper company of the 6th Division, to be attached to the 9th Division.

1 sapper company of the 8th Division, to be attached to the 11th Division.

On the 18th, the 7th Division landed at Dalny from Japan, and subsequently marched up to the centre of the investing line, where it was held in reserve until needed. On the other hand, the 17th Field Artillery Regiment, belonging to the 2nd Field Artillery Brigade, left for the north and reduced the strength by four 6-gun batteries. Two squadrons of the 1st Cavalry Regiment also left.

Early in the month the naval 12 prs. at F, the naval 4·7-in. guns at G, and the 4·7-in. siege guns at M and S were moved forward a distance of from 1,000 to 2,000 yards, to the positions shown by the letters F_1, F_2, F_3, G_1, M_1, M_2, S_1 on Map III/6. Owing to wear and tear, and to occasional hits by the enemy's fire, the number of the guns varied slightly. The remaining eight batteries of the 2nd Field Artillery Brigade were pushed up on either side of Shui-shih-ying, a few guns being advanced to within 1,300 yards of Fort Sung-shu, in the hope of being able to get a really accurate fire on the loopholes, and of demolishing the head cover. With the same objects in view, all the mountain artillery of the 9th Division, and some of that belonging to the 11th Division, was advanced to the south of the railway, in some cases almost up to the glacis of the forts. Emplacements for the guns were built in the trenches. Bombardment of the ships, town, and dockyard was carried on at irregular intervals. Occasionally it did considerable damage, but the warships had by this time mostly settled into berths where it was impossible for the Japanese to see them.

From diaries kept by inhabitants during the siege, it is plain that the Russians were not long in finding out that several more 11-inch howitzers had come into action. A large number of the Japanese shells failed to burst, and the Russians, finding that they were running out of projectiles for their own 11-inch howitzers, collected several hundred of the blind Japanese shells, re-fuzed them, and by slightly adapting the driving bands made them again serviceable. Similarly, old Chinese ammunition was adapted for the smaller calibres. For some of the light quick-firers a special form of case shot was designed, the shell being replaced by a case either of tin or of wood turned down very thin and filled with small shrapnel bullets. In this way even the one-pounders were provided with case, which was found of great service at the short ranges which prevailed.

But there were dangers from within the fortress as well as from without, for dysentery, typhoid, and scurvy now began to tell heavily on the defenders. The majority of the cases were collected in the hospital on Tiger Peninsula, where by the end of the month deaths were occurring at the rate of over ten a day. Even this was not all, for fires frequently broke out in the town and dockyard, and the lack of water, caused by the closing of the aqueduct and by the absence of rainfall, made it difficult to extinguish them.

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Finally, owing to the decrease in the numbers of the garrison, it was becoming more difficult fully to man the defences, and it was found necessary to give up even the weak sorties which had hitherto been the rule.

To return to the narrative of operations. On the 2nd November, about 11 a.m., an explosion took place in the vicinity of the Old Town. The Japanese heavy guns immediately opened fire on the site of the catastrophe, and about noon a tremendous double explosion occurred, the smoke rising in a vast white column and hanging over the scene for some time in a mushroom-shaped cloud. The disaster, said to have been caused by carelessness, occurred in a laboratory in which was stored a considerable amount of powder and guncotton intended for use in fougasses, grenades, etc. Fifty men were killed and twelve wounded, of whom two subsequently died. The following day being the birthday of H.I.M. the Emperor of Japan, the naval guns at noon fired a salute of a hundred and one shells into the forts and town, drawing a very hot reply.

Narrative of operations.

During the next two weeks the Japanese were fully employed in their mining operations and the days were uneventful. Inside the fortress some excitement was caused on the 3rd and the 12th of the month by the arrival of Chinese junks which succeeded in running the blockade, and brought in letters from the outer world. On the 15th, the destroyer *Rastoropni*, taking advantage of a blizzard which raged for forty-eight hours, managed to carry some despatches to Chefoo, where she was blown up to prevent her from falling a prey to the enemy.

The period of comparative quiet was now drawing to a close. On the 17th, the counterscarp galleries of Fort Sung-shu were destroyed by mines; and on the 20th a similar disaster overtook the defenders of Fort Erh-lung, who apparently expected this second explosion to be followed by an assault, for they opened a very heavy artillery fire against the Japanese trenches on the glacis. About sunset a number of bundles of hay and *kao-liang* stalks were thrown into the ditches of the two forts by the Japanese, an action which resulted in an outburst of fire from the Russians that would have done credit to a general assault.

This renewal of activity was followed by two more days of tranquillity, broken only by the usual bombardment which, on the 22nd, set fire to an oil store at the foot of Golden Hill, doing considerable damage.

On the following night, the 23rd November, the Japanese 12th Regiment made a surprise attack on Q and on the advanced trench of Chi-kuan Battery. The assaults were most determined and resulted in hand to hand fighting, but little is known of what actually occurred, beyond the fact that the Chi-kuan advanced trench was occupied by the Japanese for some time, and that attempts were made to build a wooden bridge across it so that men could pass on to the attack of the battery. Eventually the defenders, among whom were some sailors, crept up silently and drove the Japanese out with the bayonet. The Japanese numbers

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are unknown, but their losses were very heavy. The Russians lost two officers and sixteen men killed, one officer and about a hundred men wounded.

The ditches of the three forts being by this time dead, another general assault was fixed for the 26th November. The points to be stormed were slightly different to those attacked in October, owing to the capture of Kobu and P, and to the progress of the saps, although the ultimate objective was the same. But the Chinese Wall, the Russian main line of defence, was as unshaken as ever, and the outlook was not very hopeful for the attack. For two days preceding the assault, demonstrations were made along the whole front, especially in the neighbourhood of Pigeon Bay, where on the night of the 25th serious fighting took place at Solovev Hill, the Russians finally retaining possession.*

Third general assault.

As had occurred on the last occasion, the assault on the 26th November was preceded during the morning by a general bombardment of steadily growing intensity. About 12.30 p.m. a magazine blew up in Q, and twenty minutes later a Japanese mine was sprung in the parapet of Fort Chi-kuan. The towering column of earth and debris was clearly visible from all sides, and served as the signal for assault. Storming columns immediately left the trenches and dashed simultaneously against Chi-kuan Battery, Q, Fort Chi-kuan, the Chinese Wall near West Pan-lung, Fort Erh-lung, and Fort Sung-shu; but the Russians were again perfectly ready, and received them with a murderous fire.

As before it will be convenient to follow the various attacks in succession from the left, again beginning with that against the Chi-kuan Battery. Here no change had taken place since October in the position of the Japanese front parallel, which was still forty yards from the Russian trench. About one company from the 22nd Brigade, 11th Division, crossed this open space at the first rush. The defenders of the advanced trench appear to have fallen back a few yards to either flank, but the upper trench, the sangar, and Chi-kuan South-East, swept the ground with a devastating cross fire, and a constant succession of violent explosions, caused by a Russian device similar to the grenade fired from the Japanese wooden gun, added a new terror to the attack. No attempt was made by the stormers to cross the trench in order to advance against the battery, and in a few minutes the survivors of the party, very few in number, ran back to their own parallels. A terrible fate overtook many of the wounded, for their clothes were set on fire by the explosions and they were burned where they had fallen. Undaunted by this failure a second party immediately advanced, only to meet with a similar reception. A few men now endeavoured to clear out the Russians by moving south-east along the hill-side close in rear of the trench, instead of working their way along

Chi-kuan Battery.

* It was during the night of the 25th–26th November that the field artillery was pushed up to Shui-shih-ying (see p. 82).

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inside it; but every one of them was killed or wounded, and the survivors of the second party retired to their own trenches.

A third and weaker attempt was then made, this time round the flank of the hill to the south-east, between the Russian trench and the entanglement; but this also ended in failure and, by 5 p.m., the Russians were again in occupation of the trench opposite the Japanese parallel. For a space all was quiet, and only the dead and wounded lying on the slope bore silent witness to the fierceness of the struggle.

At 9 p.m., yet another fruitless assault was made on the Russian trench, but at 2 a.m. on 27th November, after much fighting, all hope of capturing it was finally abandoned, and two Japanese machine guns were left with the Russians.

On the right of this attack the distance separating Q from the front parallel had been reduced to sixty yards, instead of a hundred and sixty as in October, but although the work was stormed by about one company from the 10th Brigade, 11th Division, very few men succeeded in reaching the parapet. There hand-grenades and bayonets took the place of rifle fire, and of those who entered the work none came back. Indeed only a small proportion of the stormers lived to regain the Japanese trenches, and the attempt was not repeated.

Q.

Meanwhile, immediately after the explosion of the mine, some four hundred men, also from the 10th Brigade of the 11th Division, mounted the parapet of Fort Chi-kuan. The majority found what cover they could on the outer slopes, but a few of the braver spirits attempted to enter the fort, where they were met by a hot fire from rifles and machine guns behind retrenchments inside the work. A wire entanglement lay across the space between the parapet and the retrenchments, and to have forced a way through would have been almost impossible. Bayonets were freely used on the crest and many grenades were thrown, but there was not the same recklessness in the attack as was shown at Chi-kuan Battery. During the afternoon, isolated efforts to cross the parapet were made, but the position of the Russians inside the fort was so strong as to offer no chance of success, and after dark the troops were withdrawn.

Fort Chi-kuan.

Another attack on this fort was made from the sap which was gradually enveloping its eastern flank. The attack was originally directed against Q, and the stormers, about fifty in number, leaving the sap at the time of the first rush, made for the north end of that work, but were met by such a crushing fire that they almost instantly lay down in shell craters and among the rubble composing the glacis of Fort Chi-kuan. Later in the day the survivors, instead of again attacking Q, suddenly rushed towards Fort Chi-kuan, scrambling up the glacis and through the as yet undestroyed entanglement of the eastern flank. A moment afterwards they disappeared into the ditch, where they must have been shot down for nothing more was heard of them.

On the right of the 10th Brigade, the 6th Brigade of the 9th Division made an attempt from the trenches near West Pan-

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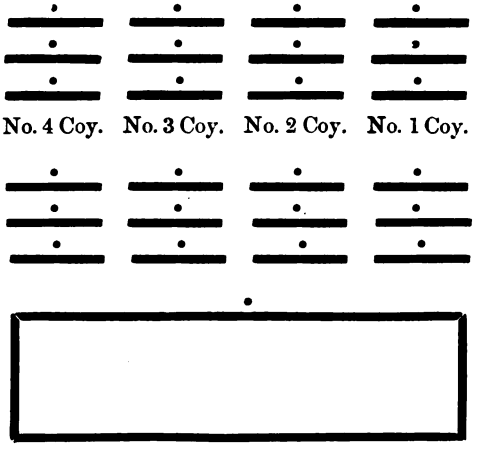
camp, thereby arousing its garrison of four hundred Russians, by whom most of them were either killed or taken prisoners. A few survivors succeeded in making their way home, after concealing themselves until the next night.

Meanwhile the remainder of the force had crossed the railway, and a halt had just been made in order to allow the rear of the column to close up, when a Russian searchlight, apparently one of those on An-tzu Shan, suddenly revealed the impending attack. Instantly the beam was waved up and down in order to attract attention, and was then directed on to the Japanese. In a few moments the garrison was on the alert, several more searchlights were turned upon the spot, and a tremendous fire from Fort Sung-shu, the Supporting Battery, Quail Hill, An-tzu Shan, Yi-tzu Shan, and the Chinese camp was concentrated upon the attack. Strange to say, the casualties were at first very few.

As the position of the force could now be clearly seen, the men of the 7th Division had no further difficulty in rejoining, and the united column pushed on towards the battery without returning the Russian fire. When within striking distance it formed for attack as below:—



To the 1st Division troops was given the post of honour, possibly because the battery lay in the section allotted to their division. No. 4 Company, 1st Battalion, led the attack, moving almost directly against the searchlight in the battery, and succeeded in penetrating the entanglement; but, after suffering heavy loss, the Japanese were compelled to fall back by the explosion of three fougasses.

Owing to the confusion which ensued after the first attack was launched, it is hard to follow the progress of the fight. Apparently the reserves found cover below the battery in the ravine, whence charge after charge was made, resulting in fierce bayonet fighting; but the Russians had by this time brought up reinforcements, and the attacks withered under the concentrated fire. Some of the Japanese endeavoured with their portable entrenching tools to dig some slight cover for themselves on the edge of the entanglement,

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where they were found next morning lying dead in rows. Such cover as could be thrown up was of little use, for the bullets came from all sides, and hand-grenades were thrown from the parapet by the defenders of the work.

There was now no hope of success, but for some hours longer the Japanese hung on, and it was not until between 2 and 3 a.m., when General Nakamura had been severely wounded and over a thousand men were out of action, that they at last withdrew. During the retirement, as during the advance, the casualties were surprisingly few, but the total losses are variously placed at from twelve to fifteen hundred. Of the wounded, many must have been frozen to death, for the night was bitterly cold, and it was impossible to render them any aid. Next morning, to an observer near Kan-ta Shan, the corpses showed as a dark patch on the hill-side. The deepest shade was immediately below the entanglement, and the Russians state that eight hundred dead lay on the slope below the battery.

With this appalling slaughter, the third general assault on the fortress came to an end, and it must be acknowledged that the arrangements for the night attack at least, left something to be desired. In the first place there seems to have been little reason for keeping the force under arms for twelve hours before moving off. Secondly, the staff arrangements were distinctly faulty. Thirdly, in spite of the hazardous nature of the attack, it might have been better to employ some one unit instead of a mixed force from various divisions. But in any case the prospects of success were so remote as scarcely to justify the attempt. Even had the battery been captured there would have been no immediate reason for the surrender of Fort Sung-shu, and during daylight the only possible way of sending up reinforcements would have been from the siege trenches round the western flank of the fort. Even so covered approaches would have been necessary and, although the abandoned Russian trench could have been utilized, it is very doubtful whether the survivors of the forlorn hope could have held the battery long enough to allow for their construction.

Observations.

During the fighting which began at 12.50 p.m. on the 26th November, and ended with General Nakamura's repulse early on the morning of the 27th, the Japanese casualties amounted to over 4,000. Of these, 52 officers and 1,119 men fell in the attacks on Chi-kuan Battery, Q, and Fort Chi-kuan. In return for this loss there was absolutely nothing to show. In the army were many who thought that the assault had been prematurely launched owing to pressure from Japan, where anxiety was growing on account of the progress of the Baltic Fleet. The Russian losses during the same period were about 500 killed and wounded.

It could be seen that in the attack there was not that reckless disregard of consequences which had characterized the earlier assaults, but General Nakamura's enterprise, although it accomplished nothing else, proved that the troops had not lost heart.

On the other hand more method was shown in the preliminary bombardment than had hitherto been the case; those points being

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most heavily shelled which were most likely to be of service to the defence, no matter whether they were in the front line or in rear, but even yet the position of some of the works had not been accurately fixed by the Japanese.

On the morning of the 27th November all was apparently again quiet, but inside Port Arthur one man at least realized that it was only a lull in the storm. Possibly spies had brought in word that portions of the Japanese 7th Division were already moving westward; but acting either on information received, or upon his own intuition of what the Japanese were likely to do, General Kondratenko, who was now in command of all the land defences, at once began to move his reserves towards 203 Metre Hill. During the next few days he went even further; for, being convinced that the Japanese would not make any more attempts against the forts in front of which they had suffered such tremendous losses, he denuded the front of attack of troops and, by the 30th November, the number of defenders left there was barely sufficient to ensure the repulse of any demonstration which might be made against it. Every available man was now held in readiness to repel an attack from the west, since, if successful, it must prove the crisis of the siege. Events were to prove how accurate the Russian commander's forecast was, and the boldness of his action compels admiration. The garrison was greatly reduced by sickness, and the reserves now consisted largely of sailors, for the infantry, almost without exception, were occupying the trenches. Moreover, the Lun Ho was crossed only by two bridges, both of which were thoroughly overlooked from some point or other of the Japanese position. Timber screens were erected on their northern parapets, but in spite of this precaution any movement of troops from one side of the river to the other was almost impossible by daylight, and had General Kondratenko's forecast proved faulty, his dispositions could not well have been rectified.

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CHAPTER XX.

The Attack on 203 Metre Hill. Map III/5.

Repulsed on the eastern side of the fortress, General Nogi, while still demonstrating against the front of attack, turned his attention to 203 Metre Hill, a height which would serve even better than Wang-tai as a point of observation whence fire could be directed upon the Russian warships. From this position, if it could be won, a view would also be obtained of the interior of Forts Erh-lung and Sung-shu.

Since the 22nd September, on which date a small party of Japanese had effected a temporary lodgment in the trenches at the south-west angle of the hill,* saps from Ridge 590 had been gradually pushed nearer to the Russian lines. No great difficulty was encountered until 203 Metre Hill itself was reached; but this proved to be of solid rock, on the surface of which was just enough earth to support a scanty covering of grass. The Russians, with infinite labour, had dug their trenches out of the hill-side, but sapping was almost an impossibility. Cover for the sappers had to be obtained by building breastworks five feet high and four feet thick, and there was much difficulty in getting material to fill the sandbags of which they were chiefly composed.

The physical obstacles were in themselves enough to retard the advance, but it was not actively hindered by the defence. The fire from the Russian trenches was kept down by riflemen on Namako Yama and Ridge 590, assisted by some one-pounders taken from the Russians, who in reply fired indirectly on the saps from various batteries; a 6-inch siege gun being specially placed for this purpose in the valley between Division Hill and Yi-tzu Shan. Machine gun fire was used from the trenches, and occasionally weak sorties were made.

The Japanese used two lines of approach, one over the col between Namako Yama and Ridge 590, and thence down into the valley separating the col from the hill which was to be attacked; the other up a ravine from the south-west. These two attacks were separated by the saddle which connects 203 Metre Hill with Ridge 590, were invisible to each other, and could communicate only by telephone. The south-western attack, on

* See p. 61.

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emerging from the ravine, was much exposed to reverse fire from Russian mobile artillery in the neighbourhood of Pigeon Bay, and took little part in the final capture of the hill. From the other attack two approaches were attempted, and on 28th November these had reached the points 1 and 2 on Map III/5.

The defences.

203 Metre Hill consists of two well defined peaks, one hundred and forty yards apart, connected by a razor-backed ridge dipping some thirty feet in the centre.* The Russians had built a four-gun battery mid-way between the peaks, but this was put out of action long before the hill was seriously attacked. A tunnel through the the ridge was at one time supposed by the Japanese to exist, but was found to be imaginary. The northern peak was crowned by a large bombproof built of timber, rails, and earth and was surrounded by a work, half trench, half breastwork. The southern peak had no bombproof, but was surrounded by a breastwork.

The main defence of the hill consisted of a trench *a a*, following roughly the 600 feet contour, but rising at the northern end to the breastwork at the summit. On the side facing the Japanese, this trench appears to have been covered over and loop-holed throughout its entire length. It was dug to a depth of approximately 4 feet 6 inches, so as to bring the loopholes level with the natural surface of the ground, the excavated rubble being mostly thrown to the rear, to be used later for the overhead cover which varied considerably in thickness. In places it consisted of one foot of timber in baulks on which was laid a 1-inch steel plate, and on the top of all were four to five feet of earth in bags; such strength was, however, exceptional. The trench was about four feet wide and was traversed every fifteen to twenty feet. The loopholes were protected by steel shields. Two or three machine guns were placed in the trench, which was literally impregnable to an assault without bombardment, owing, in the first place, to the difficulty of effecting an entrance, and secondly to the impossibility of working along inside the blindages in face of a determined defence. There was no communication from the rear to the centre of the trench, and all movement into or out of it had to be made from the ends. Below were two lines of plain wire entanglement which, however, were not very formidable, as it was almost impossible to drive their wooden stakes into the hill-side.

Owing to changes in the slope, a good deal of the ground near the foot of the hill was unseen from *a a*. To obviate this weakness, a lower trench *b b* was planned, following roughly the 500-feet contour; but it was never finished and was unoccupied except at the ends, leaving much dead ground in the depression both above and below the point marked X. The lower entanglement was constructed without regard to *b b*, and for most of its length was in rear of the trench. *b b* was of larger section than *a a*, being in the centre some ten feet wide by four to five feet deep, and looked almost as though the designer's intention had been to convert it into

* The northern peak was 203 metres high, and gave its name to the hill. The southern peak was really the higher, being 691 feet, or about 210 metres, above sea level.

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an obstacle. A communication had been planned between *b b* and the centre of *a a*. It had evidently been realized by the defence that the dead ground at X was a grave danger, for *b b* had been doubled in this portion by the addition of a similar trench *c c*. Towards its northern end the trench was interrupted by a cliff, at the foot of which was a small and almost level plateau. Around the edge of this were placed several rifle pits intended to command the slope below them.

With the loss of Namako Yama in September, the rifle pits became untenable, and with a view to flanking the slopes of 203 Metre Hill the Russians began, on the 1st October, to strengthen the fortifications of the height to the north-east, which was called by the Japanese Akasaka Yama. The Russians surrounded it with a deep and heavily traversed trench *d d*, provided everywhere with loopholes, and in some places with overhead cover. A light wire entanglement covered the more exposed portion of its front. The summit was encircled by yet another trench and entanglement.

The northern slope of Akasaka Yama, up which the Japanese would have to advance to the attack, was almost precipitous, and at Y was not commanded from any point in the defences. But between the Russian trenches and the top of the steep portion lay a stretch of gentle, grassy slope, forming an ideal glacis nowhere less than fifty yards in width. On the northern side of the col between 203 and Akasaka Yama the valley was sown with fougasses.

A good road led from the New Town to the centre of the position, but from the foot of the hill to the trenches the road was rather exposed and was used only for wheeled traffic. Communication with the summit was usually effected up one or other of the ravines.

On both flanks other works guaranteed the position against turning movements.

It is a matter of opinion whether or no it would have been possible, by driving a wedge of siege works into the undulating plain enclosed between 203, Division Hill, and Yi-tzu Shan, to force the evacuation of Division Hill and thus take 203 in reverse. But time was pressing and, rightly or wrongly, it was decided to take this formidable height by storm; and in order to save the troops from flanking fire, Akasaka Yama was to be carried at the same time.

The honour of attempting this tremendous task was entrusted to the 1st Division, to which was attached a portion of the 38th *Kobi* Regiment. The attack was to be supported by the four 11-inch howitzers at A (Map III/6); three batteries of 4·7-inch field howitzers situated respectively at Ta-ping-kou, Hsiao-tung-kou, and near the northern end of Namako Yama; two batteries of 3·5-in. mortars near Ta-ping-kou, as well as by the artillery of the 1st Division. Two battalions of the 26th Regiment, 7th Division, were held in reserve in the trenches.

Narrative of the operations.

At 8.30 a.m. on the 28th November, two battalions were launched

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from the sap 1 against the southern peak, one battalion from the sap 2 against the northern peak, and three companies up the steep hill-side at Y against Akasaka Yama. Availing themselves of the dead ground at X, the stormers from 1 managed to reach the south-western corner of *a a*, but were unable to effect a secure lodgment, and immediately began to suffer heavily from the fire of Russian field artillery near Pigeon Bay. At 11.30 a.m., they broke, but were rallied and again advanced to the attack, only to be checked again, this time by machine guns. Although unable to advance they would not retire, and for some time the battle resolved itself into a determined fire fight, during which the assailants suffered heavily. At 2 p.m., a field gun was dragged by hand up to the central peak of 174 Metre Hill, whence it kept up a constant fire of shrapnel against 203 Metre Hill until the end of the fighting. With this assistance the Japanese remained on the hill-side until 7 p.m., when a Russian counter-attack forced them to retire to their own saps, having nothing to show in return for their heavy losses beyond a certain amount of damage to the entanglements and trenches. The woodwork at the south-western angle of *a a* was burning at nightfall.

No better fortune attended the attack from 2, the stormers being driven back to their trenches with heavy loss.

At Akasaka Yama also the attack ended in failure, but the Japanese succeeded in building a sangar on the edge of the grassy slope, about forty yards from the Russian trench, whence their communications to Namako Yama were secure; they also made a wide passage through the outer entanglement, but their losses had been very severe.

During the night another determined attempt was made to capture both 203 Metre Hill and Akasaka Yama, and this time a lodgment was effected in the south-west salient of *a a*. This was, however, the only gain, and the casualty list was already disappointingly long.

On the morning of the 29th, 203 Metre Hill was covered with Japanese dead right up to the breastworks on both peaks. Traces could be seen where the attackers of the northern peak had tried to form communicating trenches from *a a* up to the bombproof, showing that the northern end of *a a* must for some time have been in Japanese hands. At 3 a short length of breastwork had been built, but it was not held and nothing connected it with the saphead 2. At Akasaka Yama the situation was unchanged. A number of hand-grenades were being thrown by both sides, but the distance was just outside the effective range of these missiles, and the main result of their use was the further mutilation of the bodies which littered the space between the combatants. All day long both 203 Metre Hill and Akasaka Yama were under heavy bombardment from the Japanese artillery, and in the evening another abortive attempt was made against both peaks of the former hill.

It was now clear that the troops of the 1st Division were exhausted by the calls which had been made upon them during the last thirty-six hours, and that if any further assaults were to be made fresh troops must be brought up. Fortunately for

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the Japanese some units of the 7th Division were still available and, as General Nogi decided that the time had come to employ them, the remaining battalion of the 26th Regiment, and the whole of the 28th, were despatched from the centre of the investing line to the scene of the fighting. The detachment of the 38th *Kobi* in front of Akasaka Yama was temporarily relieved by part of the 15th Regiment which, in turn, was replaced at 3 a.m. on the 30th November by a battalion of the 26th Regiment. The 28th relieved the troops of the 1st Division in front of 203 Metre Hill.

The new troops were to be supported by their own artillery, and as soon as it came into action on Ridge 590, the gunners of the 1st Division were largely used as stretcher bearers.

Dawn on the 30th November found the situation unaltered, except that a communicating trench had been begun between 1 and *a a*, and doubled between *a a* and *b b*. Since the ground was too hard to dig, cover was obtained by building parapets of stones and sandbags, and progress was consequently slow. An attempt had been made during the night to connect the breastwork 3 with 2, but the route of the proposed connexion was marked only by a line of corpses. If the work was difficult by night, by day it was not even attempted; and of some fifty officers and men who were still crouching behind the scanty cover of the breastwork, half rushed back to the saphead during the morning.

The Japanese had by this time realized that the capture of the position by direct assault was not feasible, and now tried to clear the Russians out by sheer weight of metal.

Akasaka Yama did not receive so much attention as 203 Metre Hill, but the 7th Division artillery on Ridge 590 could enfilade a portion of the trench *d d*. Once, some fifty Russians made a sortie from this trench against the sangar, evidently expecting to find it held only by a weak trench guard, but were met half-way by a superior force, and some fierce bayonet fighting resulted in the Russians being driven back with the loss of three-fourths of their number. A hot fire was opened by the 7th Division artillery, and although some of the pursuing Japanese actually got a foothold inside the trench, their own shrapnel forced them to retire.

After a morning of bombardment another attack was made at 2.30 p.m. on the southern peak. One battalion of the 28th Regiment was left in the valley as a reserve, while the other two battalions advanced from 1, disregarding the covered approach but taking advantage of the dead ground at X. They moved in four lines of half battalions, the distance between lines being about six paces; in each line the companies were in close order in two ranks. The lower entanglement caused some slight confusion, but the column advanced without mishap until, on emerging from the dead ground, it was struck in flank by fire from the northern end of the hill. Then the attack came to a standstill for about five minutes, during which time the Russian fire was returned. A further advance carried the column as far as the trench *a a*, whence the leading line pressed on to the breastwork

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above. But in ten minutes this line broke, sweeping away the whole of the column, except a few men who remained in the lodgment, and halting only at the sap 1. After a few minutes, however, the troops again climbed the hill, and lay down in the dead ground between *b b* and *a a*. The Russian batteries near Pigeon Bay were quickly made aware of the presence of this excellent target, and began to search the face of the hill with shrapnel, causing very heavy losses. To this fire the two Japanese battalions were unable to make any reply and, after enduring it for some time, they were withdrawn, retaining only the lodgment already formed in *a a*.

The bombardment of 203 Metre Hill was continued throughout the afternoon. Already the Russian position resembled nothing more than a huge heap of rubble; the upper entanglement had almost disappeared, and the trenches were showing signs of damage. That the defenders were finding difficulty in making their way along *a a*, was evident from the fact that one man left the centre of the trench and tried to reach the rear of the hill by crossing the ridge between the two peaks. He was immediately shot.

At 4 p.m., some twenty men with an officer, the survivors of the party of Japanese behind the breastwork 3, creeping along in twos and threes, tried to reach the cliff. Some few reached their goal and managed to find secure cover in the clefts. Half a dozen, with the officer, found cover in the trench *b b*.* The remainder fell on the way, only one wounded man succeeding in crawling back to the starting point. After dark those who were left alive returned to 2.

During the night yet another attack was made on Akasaka Yama, but beyond the fact that it ended in failure, nothing is known of what occurred. Meanwhile the Japanese connexions between sap 1 and the lodgment were much strengthened, and there was now secure communication. On the following day, the 1st December, another attempt was made on the southern peak, and for a time the Japanese held the summit; but at 3 p.m. they were driven back to their lodgment, where they were constantly improving their foothold and extending their breastworks so as gradually to work their way towards the crest. At the southern end of the hill the Russians clung to their trench, exchanging hand-grenades with the Japanese at a distance of a few yards; but the defenders of the northern end were prevented by the south-west shoulder of the hill from taking the occupants of the lodgment in reverse. Meanwhile they were themselves bombarded vigorously by the 11-inch howitzers at A.

During the 2nd, 3rd, and 4th December, no further assaults were delivered, but the Japanese continued the cannonade, while devoting all their efforts towards pushing on their trenches. The breastwork 3 was abandoned, but a properly zigzagged approach, with a parallel fifty yards long across its end, was made at 4, and a sap was run up the central ravine to the trench *c c*.

* The Japanese being now in occupation of the south-west corner of the hill, this portion of *b b* was no longer enfiladed by Russian fire, and formed cover for the attack.

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On the 3rd, in preparation for the next great endeavour, two battalions of the 27th Regiment, 7th Division, were brought up, and on the 4th, the 17th Regiment, 8th Division, joined the 1st Division. The latter regiment did not, properly speaking, belong to the Third Army, but was attached lest it should be needed, and was kept in reserve, taking no active part. By the evening of the 4th December, the lodgment had been extended until its breastwork formed a secure communication with the summit of the southern peak, on which the Japanese were now firmly established, their breastwork being everywhere loopholed for rifles or machine guns. But the Russian grip of the rear of the hill was as tenacious as ever, and a hot exchange of musketry was kept up day and night, while stones and grenades were constantly flying to and fro.

At last General Nogi's preparations were complete and the final assault was fixed for the 5th December. All that morning a tremendous bombardment continued without intermission, and meanwhile the troops which were to deliver the attack were drawn up as follows:—

26th Regiment, 13th Brigade, opposite Akasaka Yama.
25th Regiment, 13th Brigade, in reserve near Head-Quarter Hill.
14th Brigade* against 203 Metre Hill, with one regiment in reserve.
One battalion, 17th Regiment, in reserve west of Namako Yama.

While the Japanese were making ready for the attack the Russian field batteries near Pigeon Bay were firing very little, but the ships in the harbour and the coast batteries on Tiger Peninsula were throwing heavy shells over the hill into the hostile lines beyond.

By 1.30 p.m., Japanese troops with fixed bayonets crowded the parallel 4 and the approaches leading to it. Fifteen minutes later the roar of their artillery ceased, and a company started to ascend the hill by twos and threes, re-forming at the trench *a a*. In this advance they suffered no loss, and it was evident that not a single Russian was left alive on the western side of the hill. From *a a* the company climbed up in extended order to the breastworks round the northern peak, but no one ventured to cross the crest line. Reinforcements were now sent up from 4, company by company, until two battalions occupied the whole ridge from peak to peak; some of the men threw stones and grenades at the Russians on the eastern side, while others built a sandbag parapet behind which they could maintain themselves. All this time the Russian side of the hill was swept by six Japanese batteries firing from the neighbourhood of Shui-shih-ying. Of these guns, eighteen were using shrapnel at 3,300 yards, and eighteen were firing high explosive shell at 6,000 yards. It is a question whether they would have had much effect during the first two or three days of the attack, but now that the

The final assault.

* 27th and 28th Regiments.

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position was obviously no longer tenable, the Russian reinforcements could not be brought to face their fire, and by 4.30 p.m. the bitter struggle was over, and the whole of 203 Metre Hill was at last wrested from the defence. Directly the ridge was gained, a naval lieutenant and two or three men were sent to the summit. There they built themselves with rocks and sandbags a recess in which they lay, directing by means of a portable telephone the fire of the Japanese guns against the Russian squadron, now clearly visible from the top of the hill.

That night the Russians made two attempts to recapture the lost position, but when they failed the whole line from Akasaka Yama to Division Hill was evacuated and was at once occupied by the Japanese. For several days longer the Russians held the two knolls, five hundred yards south and south-west of 203 Metre Hill respectively, but finally abandoned them and fell back on the line Yi-tzu Shan, height five hundred yards north of Fort Ta-yang-kou North, height east of Liu-chia-tun, Ta-liu-chia-tun, Solovev Hill.

The defence of 203 Metre Hill was a fine example of Russian tenacity. Before it passed into Japanese hands, the western side had been so pounded with shell of every description that it was difficult to recognize the trace of the trench *a a*. In places it had been entirely obliterated, and nowhere could a man have remained in it and lived. Nearly four hundred Russian dead were left in the trenches and on the slopes. The bombproof was utterly wrecked by the 11-in. shells, and in that confined space alone thirty bodies were piled, while on the hill-side it was almost impossible to walk without stepping on some fragment of humanity. To the navy must be given a share of the credit for the defence, since the garrison consisted partly of sailors. Whatever may have been the defects of the Russian fleet when at sea, the behaviour of the men when on shore was above reproach.

Observations.

The Russian losses on 203 Metre Hill and Akasaka Yama, amounted to about 3,000. Considering the small size of the position which was actually attacked, the number of Russian troops engaged at any one time can hardly have exceeded 1,500. The number of casualties, therefore, presents the extraordinary feature of being at least twice the strength of the garrison.

The Japanese casualties have been variously estimated at from 9,000 to 14,000. They were certainly terribly heavy, for the number can safely be placed at about 12,000 for the eight days' fighting. The proportion of killed must have been high, since the weather was bitterly cold, and many of the wounded must have been frozen to death where they lay.

The departure of the Baltic Fleet from Russia, rendering it imperative that the Port Arthur squadron should be destroyed, was undoubtedly the factor which decided the Japanese to take 203 Metre Hill by assault, instead of waiting until the siege works could make themselves felt. But in the conduct of the operations there was much sacrifice of life which might have been avoided had the artillery been allowed more time before the first infantry

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attack. It was only after three days and three nights of incessant bombardment that the Russians finally gave way. It is difficult also to see the reason for launching the large column on the 30th November, unless the intention were to force a way to the ridge by sheer weight of numbers. But for this purpose the formation was too unwieldy, and the attack was wanting in dash.

The idea of replacing the exhausted 1st Division by the newly-arrived 7th was wise; but the fresh troops were brought up along a road down which hundreds of wounded were being carried, and for some time previous to the assault of the 30th November they were facing a hill-side covered with the bodies of those who had failed in the very task they were about to undertake. Nevertheless, it would be impossible to speak too highly of the behaviour of the men under exceptionally trying circumstances. Through their wonderful gallantry and discipline General Nogi at last gained possession of a point of observation whence a destructive fire could be directed upon the doomed vessels in the harbour. By this success, also, Admiral Togo's difficulties were smoothed away, and he could now await the arrival of Admiral Rozhesventski's fleet with comparative equanimity.

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CHAPTER XXI.

Operations during December.

Movements of besiegers.

As the result of the capture of 203 Metre Hill the western front of the fortress was now thoroughly exposed, and on what had previously been the front of attack, operations were henceforth confined to subterranean work, mines being driven from the various advanced positions as follows :—*

Towards the lower trench of Chi-kuan Battery.
Towards Q.
Under the parapet of Fort Chi-kuan.
Two galleries, one under each branch of the Chinese Wall, from the advanced parallel south of East Pan-lung.
From the advanced parallel between East and West Pan-lung, towards the Chinese Wall.
From the advanced parallel immediately north of I Battery, towards the Chinese Wall.
Under the parapet of Fort Erh-lung.
Under the parapet of Fort Sung-shu.

Eventually, only those mines were fired which were under the parapets of the three permanent forts. Those from East Pan-lung were loaded, but the remainder were not ready before the capitulation.

As a further result of the new phase, upon which the operations had entered, a portion of the siege artillery was gradually shifted to fresh positions, the general tendency being to the front and westward (Map III/6) :—

Two 11-inch howitzers from T were sent to the valley west of 203 Metre Hill, but the fortress capitulated before they could come into action.
Six 6-inch howitzers from N to N_1 near Solovev Hill.
Six 6-inch howitzers from N to N_2 near Namako Yama.
Four 4·7-inch howitzers from K to Ta-ping-kou.
Three naval 12-pounder guns from C to Akasaka Yama.
Two 4·7-inch naval guns from south of Tien-han-kou to the col between Akasaka Yama and 203 Metre Hill.†

* See also p. 167.

† These two guns were placed in heavily blinded emplacements, but nevertheless one of them was struck squarely on the breast by a Russian shell, and was knocked to pieces. This was almost the only case of a direct

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Two 6-inch mortars (moved on different dates) from X to the captured Russian work P (Map III/4) in order to batter the gorge of Fort Chi-kuan.
One 6-inch mortar from X to East Pan-lung.
One 6-inch mortar from X to West Pan-lung.
One 6-inch mortar from L to the captured Russian work G (Map III/4) to batter the flank defence of the gorge of Fort Erh-lung.
One 6-inch mortar from L to the trenches on Sung-shu Hill, to batter Fort Erh-lung.

Preparations were also made to move two of the four naval 6-inch guns from D, to the height west of Kan-ta Shan, and two more naval 6-inch guns of 50 calibres were to have been mounted near 203 Metre Hill when the capitulation stopped the work.

Meanwhile, the situation, so far as the infantry was concerned, remained practically unchanged. The 7th Division retained its position on the right of the 1st Division; and further west the 1st *Kobi* Brigade remained near Pigeon Bay, but the outpost line was stiffened with 7th Division troops, and was able to assume the offensive. The 1st Division moved its main strength eastward to the neighbourhood of Shui-shih-ying, and began sapping towards Fort Yi-tzu Shan from the heights west of the village and from Division Hill; while the men of the 7th Division built covered communications as they pushed their way towards Fort Ta-yang-kou.

Inside the fortress the situation grew more serious day by day. The hospitals were hopelessly overcrowded, and although starvation never made itself felt, indifferent food and lack of variety told heavily on the troops. Before the end of the month £95 had been paid for two underfed cows, and £40 had been refused for a pig. Pork would always fetch 10*s.* a pound, beef of poor quality 3*s.* 6*d.*, horseflesh 1*s.* 8*d.* Eggs were costing 6*s.* 6*d.* apiece. Thirty-six pounds of garlic sold for £64. Fishing had entirely ceased. With the capture of 203 Metre Hill the whole of the New Town was exposed to the view of the besiegers, and as the western attack pressed closer bullets began to fly about the streets, while bombardment rarely ceased by day or night. Hospitals were constantly struck by shells, a fact which made the subject of several indignant protests on the part of the defence, messages being exchanged under flags of truce. A Russian proposal that bombardment should be limited to certain areas was emphatically refused by the Japanese, who were undoubtedly within their rights since the hospitals were scattered throughout the fortress, and many of them were large buildings standing in the line of fire between the siege batteries and the ships or dockyard. The Japanese explained that owing to the obstinate resistance which had been encountered the siege guns had become much worn, and

Situation in the fortress.

hit on a Japanese siege gun. Situated as they were on the col, and at no great distance from the Russians, this pair of guns offered an unusually good target.

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would no longer throw shells with accuracy; but they accepted a map showing the positions of the hospitals, and promised that they would try to avoid further damage.

Shortage of ammunition grew more and more pronounced. Explosives for the hand-grenades were running short, and it became necessary to pick up some of the mines in the roadstead, to unload them, and to use the charges with which they were filled. Coin and notes were very scarce, and for Government purposes were supplemented by cheques drawn on the Russo-Chinese Bank.

Narrative of operations.

On the 2nd December the dead were removed from the hill-side below Chi-kuan Battery under a flag of truce, while the fighting for the possession of 203 Metre Hill was in progress. Owing to the improved observation resulting from the loss of that commanding point the Russian fleet was soon crippled, and on the 8th the only ship capable of leaving the harbour was the battleship *Sevastopol*, which steamed out and anchored close inshore at the southern end of the Tiger Peninsula. There she found some shelter, for the high ground concealed her from the view of the observers on 203 Metre Hill. Now that the protection of the fleet was no longer possible, one great reason for the defence of the fortress had ceased to have any weight, and on this day a council of war was held to consider whether resistance should be further prolonged. But the expediency of holding Port Arthur could no longer be argued on purely military grounds, for the national honour was deeply involved, and to the lasting credit of the garrison it was decided that the hour of surrender had not yet come.

On the 9th, the bombardment utterly destroyed the workshops in which 6-inch shells were being manufactured. But in spite of everything the blockade was not yet perfect and, on the following day, two junks arrived with despatches; on the 12th, the steamship *King Arthur* ran through with a cargo of more than 800 tons of flour, besides a few delicacies such as hams, sausages, and vegetables.

Death of General Kondratenko.

Three days later a great misfortune, the consequences of which were far-reaching, befell the defenders. At 9 p.m. on the 15th, General Kondratenko was holding a consultation with several of his officers in the casemates of Fort Chi-kuan, while a few sailors were filling hand-grenades in an adjoining compartment. Just at that moment an 11-inch shell broke through the casemate, and the fall of masses of concrete, combined with the explosion of the shell and of the hand-grenades, caused the death of the general and of seven other officers, while seven more were injured. His loss was irreparable. Amid the jealousy and recrimination of the various Russian commanders General Kondratenko stood apart, and neither before nor after his death was there anyone who found fault with him. He was buried in a special cemetery on the western slopes of the hills below Battery No. 20, and General Fock was appointed to succeed him as commander of the land defences.

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Capture of Forts Chi-kuan, Erh-lung, and Sung-shu.

From all sides the besiegers were now closing in, and events followed one another in rapid succession. On the 17th, at 9 a.m., the 7th Division captured the height five hundred yards north of Fort Ta-yang-kou North. On the 18th, the mines under the parapet of Fort Chi-kuan were fired, and the first of the permanent works to fall was taken that night.* One solitary piece of good fortune broke the sequence of disasters when on this same day a Russian shell happened to strike a quantity of hand-grenades which had been left on 203 Metre Hill and had been piled in a heap by the victors. The explosion killed or wounded fifty men, but such an incident could not have more than a momentary effect, for the end was very near.

Even now the spirit of the defence was not entirely broken, and, about 8 p.m. on this date, two companies of the 27th East Siberian Rifles attempted to retake the height which had been lost on the previous day, but were finally repulsed after five hours' fighting.

Eight days later, the 7th Japanese Division succeeded in capturing Solovev Hill, which had been most gallantly held by its garrison since the beginning of the siege, and it is stated that only fifteen men were left to retire from the hill. From this time forth the Russians were steadily pressed back on their western front.

On the 28th, the mines under the parapet of Fort Erh-lung were fired; and the second fort was captured on the evening of the same day.†

Still the bombardment went on relentlessly, and on the 29th, to the accompaniment of 11-inch shells, another council of war was held in Port Arthur. Again it was decided that resistance might be yet further prolonged; but General Kondratenko was no longer present, and there was a noticeable hesitation on the part of more than one of the leaders of the defence.

On the 30th, a fire broke out in the dockyard, and at 10.10 a.m. on New Year's Eve the mines under Fort Sung-shu, the last of the permanent works on the original front of attack, were fired. The survivors of the garrison surrendered about midday,‡ but all attempts at a further advance were checked by the defenders of the Supporting Battery.

Thus, when the year 1904 drew to its close the situation of the fortress was desperate in the extreme. The Japanese held all the advanced works from Fort Chi-kuan to Fort Sung-shu inclusive, and although the Chinese Wall was as yet unbroken, it was obvious that it could not be held for long. Once the wall was carried the Japanese would soon possess themselves of Wang-tai, and with both that and 203 Metre Hill in their hands, there would be no single spot inside the fortress which would not be overlooked;

Situation at close of 1904.

* See p. 111.
† See p. 116.
‡ See p. 119.

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the inner *enceinte*, though formidable in appearance, would be enfiladed to such an extent as to be untenable; there was no cover capable of giving protection against the 11-inch shells, and the fighting would become mere butchery.

On the western front, moreover, the defenders were being rapidly driven back from their advanced positions, artillery ammunition was failing, and it was doubtful whether the main line of defence would be able to resist an assault.

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FORT CHI-KUAN:

SECTION A B.

SECTION c, d.

SECTION C D.

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CHAPTER XXII.

The Attack on Fort Chi-kuan.

In the preceding pages an attempt has been made to describe the steps by which the Japanese Third Army gradually forced its way, in the face of almost overwhelming difficulties, to the line of heights which command Port Arthur. But before reaching the closing scene of that great drama, we must turn once more to the north-eastern front of the defences and follow the operations by which the three forts, Chi-kuan, Erh-lung, and Sung-shu were finally reduced. Hitherto, interest has centred chiefly in the infantry and artillery, but when General Nogi turned his attention to 203 Metre Hill the brunt of the fighting on the old front of attack fell to the lot of the sappers. From the very nature of their work it is inevitable that much should be obscure, for it lay chiefly underground and in narrow passages in which there was hardly room to stand upright. Yet enough is known to enable us to realize the desperate nature of these three great struggles, which are almost without parallel in the history of warfare. From a purely military point of view they possess a peculiar interest, for they are the only instances of mining operations on a grand scale under modern conditions. At the risk of being tedious, therefore, they must be described in some detail, beginning with the attack on Fort Chi-kuan, the design of which is given in Plate VIII.

From the plan it will be seen that the ditch was thoroughly swept by fire except for the section IV–V. At V a recess had been excavated in the counterscarp, and it was doubtless intended to extend the long gallery of V–VI, and to place a chamber at V.

Description of the fort.

The face I–VI was symmetrical. Two low arches (Sections AB, KL) gave access from the ditch to a chamber, curved in plan, whence an iron door led to the communicating passage.

On either side of the entrance-chamber were three casemates intended to contain machine guns for sweeping the flanks. At both I and VI a countermine opening was left in the concrete, and through them the Japanese eventually obtained access to the galleries. On either flank was a chamber about twenty feet long provided with two large ports, and intended to flank the face. That at VI connected with the long gallery of V–VI, in which rifle loopholes were set at twelve paces interval. Near the

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southern end, steps led to a passage under the ditch (Section IJ). One end of the passage emerged without protection into the open air near V; the other end terminated outside the fort proper, but within the ditch, in a masonry pit whence egress could only be obtained by ladders. Thence the fort itself was entered through a T-shaped concrete structure (Sections cd, CD, IJ). On either side of the central passage an iron door led to a casemate provided with loopholes firing to the rear. The western casemate was connected by a flight of steps with a two-storied structure along II–III. The eastern casemate was largely covered with earth and sandbags, the concrete of the western one was left exposed.

In addition to the flight of steps from the above-mentioned casemates, access to the two-storied structure could be obtained from three pits inside the fort, the descent being made by ladders or by steps made of sandbags (Section GH). From the lower story steps led to the machine gun chambers sweeping II–III (Section EF). Although the top of this two-storied structure was exposed to fire it received very little damage.

A wire entanglement was carried across the inside of the fort, and a stout breastwork of sandbags, timber, and earth was constructed behind the entanglement where it acted as a retrenchment. Small shelters, proof against all but the 11-inch shells, ran the whole way round the ramp behind the banquette. The parapet was formed into a series of small, splinter-proof chambers. Traverses, built at intervals of a few feet, were roofed over with shrapnel proof cover, and provided in rear with walls of sandbags, so as to form chambers protecting the riflemen from splinters of shells bursting inside the fort, openings being left just large enough to admit men.

From the Section EF it will be seen that the crest was higher than the top of the two-storied casemates, and was consequently liable to reverse fire from P, as soon as that work was lost to the defence. To guard against this danger a breastwork of sandbags was built along the top of the two-storied casemate. (Plate X.)

The ruling thickness of concrete was 3 feet 6 inches to 4 feet.

The ditch was cut in rock and was unrevetted, except where the counterscarp galleries acted as revetments and at Angle II where there was a dry rubble wall to the escarp. On the face and flanks the slope of the escarp was only 2/1, and was climbable without ladders by determined men; but the vertical counterscarp removed all hope of return in case of failure. In spite of the most desperate gallantry, stormers were unable to get any hold on the parapet before the ditch was completely dead.

The garrison could enter the fort either by a flight of steps, leading to the ditch at V, or over a light footbridge across the ditch IV–V. Water was obtained from the reservoir in rear, and was stored in a small tank close to the pit leading to the long gallery.

At the beginning of September saps were broken out against

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Fort Chi-kuan.

Hsiao-ku Shan. Q

VIEW OF GORGE FROM P.

Japanese sap.

DITCH OF EASTERN FLANK, SHOWING LONG COUNTERSCARP GALLERY WITH SOUTHERN END BLOWN UP BY RUSSIANS.

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Fort Chi-kuan from the ravines in the neighbourhood of Wu-chia-fang, and it soon became impossible for any man to look over the parapet without being fired at. Small sorties were frequently made, but effected very little. For the garrison of the fort, there was ample cover against the shells from any piece which the Japanese had as yet mounted, and the defenders watched without anxiety the advance of the siege trenches, occasionally amusing themselves by exposing dummies in order to draw fire. But with the opening of October the first shells from the Japanese 11-inch howitzers entirely changed the aspect of affairs. The exposed concrete bombproofs of the fort gave way at the first impact, and the fact that they were not utterly wrecked must be attributed partly to the difficulty of accurately observing the fall of shells inside the fort, but more to the good luck which for a time favoured the defence.

The attack on the fort.

By the middle of October the siege trenches were already established on the outer slope of the glacis, which was of loose rubble and at a distance of forty yards from its crest dropped sharply at an inclination of 1/1. (Plate IX.) For one hundred and fifty yards from the foot of this steep slope the ground was unseen from the parapet, and the Japanese were able to push their saps directly towards the fort, suffering only from the fire of the works to the south. It would be hard to find a more convenient point of departure for mines. Two short parallels were first constructed on the outer slope, and from the more advanced, which acted as a mine trench, a mine gallery was driven towards Angle I, Plate VIII. As the intention was to strike the foot of the concrete counterscarp gallery, the mine gallery was made nearly level.

Although the Russians were suspicious as to the intentions of the Japanese, and did as much damage as possible to the mine trench by firing on it with the 6-inch guns of Chi-kuan Battery, they were for some time uncertain as to the existence of mines. Countermine galleries were, therefore, run out for a distance of about ten yards from the openings left for the purpose at Angles I and VI, and at the head of each a listener was posted.

Since the underground listeners could hear nothing, it was determined, on the 19th October, to make a sortie with a view to ascertaining whether mines existed or not. Three sappers and twenty-five infantrymen, under an officer, moved down the valley on the west and quietly took up a position north of the fort, on the outer slope of the glacis. Two sappers and fifteen infantrymen, under a non-commissioned officer, passed through the entanglement on the east face and took up a similar position on that side of the fort.

At 2.45 a.m. on the 20th October, the beam of a searchlight was for a moment thrown on to Ta-ku Shan; this was the signal to get ready. At 3 a.m., the beam was for the second time thrown on to Ta-ku Shan, and at this signal the parties on the glacis made a dash for the Japanese trenches. At the same time dummies were raised from the covered way near Angle VI, and strings weighted with stones were thrown on to the entanglement, in order that the

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Japanese might be led to think that a sortie was coming directly towards them, instead of against both their flanks. Fire was suddenly opened against the Japanese works in the vicinity.

This small sortie was a complete success. The Japanese were taken by surprise, and the Russians succeeded in reconnoitring the mine gallery, but owing to the darkness and confusion the information obtained was not absolutely accurate. The two parties, after exploding a small charge in the gallery, fell back directly on the fort, with a loss of three killed and seven wounded.

On the 22nd October, the listeners reported that the Japanese could be heard working; but the sounds were very faint, and it was not until the 23rd that it was definitely ascertained that a mine gallery was approaching Angle I. There was still a great deal of uncertainty as to its nature and position, but on the 24th it was decided to charge a countermine.

Meanwhile the Japanese miners were steadily pushing on their work. No warning sound reached them, for all the excavation had been completed by the defence before the attack arrived within hearing distance, but on the 27th, when they gained a point some ten yards from Angle 1, the miners noticed a strong smell of tar, and found that they had struck a loaded countermine.* Volunteers with ropes tied to their ankles were trying to reach the firing wires when, shortly before 1 p.m., the charge exploded, killing three men.

A bad miscalculation on the part of the Russians led to the countermine doing more harm to the defence than to the attack. The intention had been to fire a *camouflet*, that is to say a mine so lightly charged that it would merely shatter the enemy's gallery—to which it must be in the closest proximity—without breaking the surface of the ground. To an observer above ground the firing of a *camouflet* should announce itself merely by a heavy thud, with perhaps some disturbance of the surface; there should be no crater. The Russian countermine, however, hurled into the air a mass of earth and debris, and produced a deep crater which the Japanese at once seized. It then became apparent that the concrete of the counterscarp gallery had been shattered and laid bare near Angle I.

On the 28th October, the Japanese sappers, with the aid of explosives, enlarged the breach in the concrete until it was wide enough to allow of a man entering the counterscarp gallery. The defenders did not realize that the Japanese were about to force an entry and, on hearing the explosion, a Russian soldier went to the breach in order to look out, but was promptly shot. A charge was then thrown into the counterscarp gallery, and under cover of its explosion the Japanese entered at Angle I. There they built a breastwork of sandbags between themselves and the Russians, who still held the whole gallery except a few feet near the

The counterscarp gallery entered.

* The Russians usually placed their mine and fougasse charges in wooden boxes, holding about 100 lb. of black pebble powder, and waterproofed with tar.

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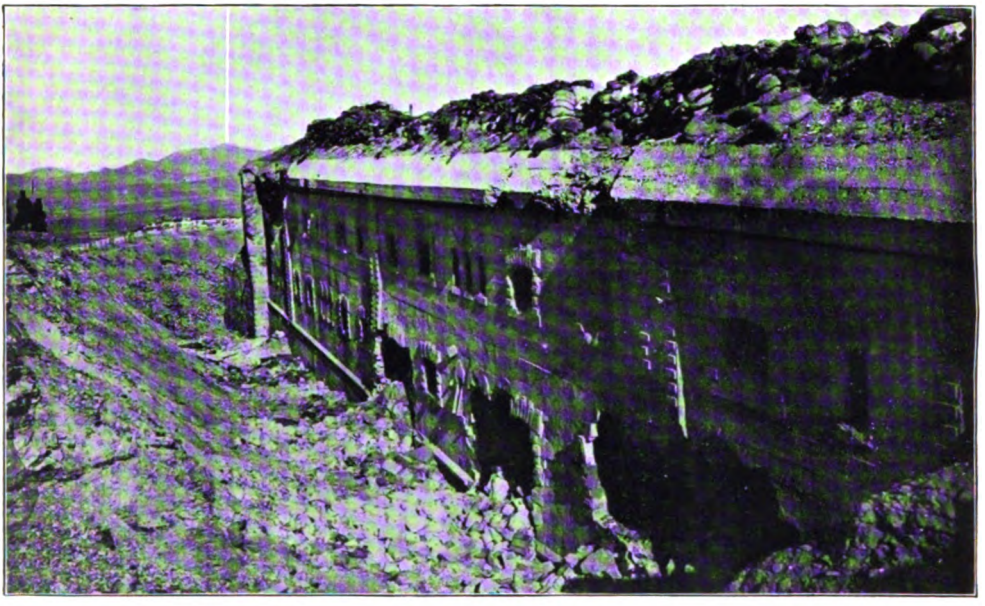
Plate X.

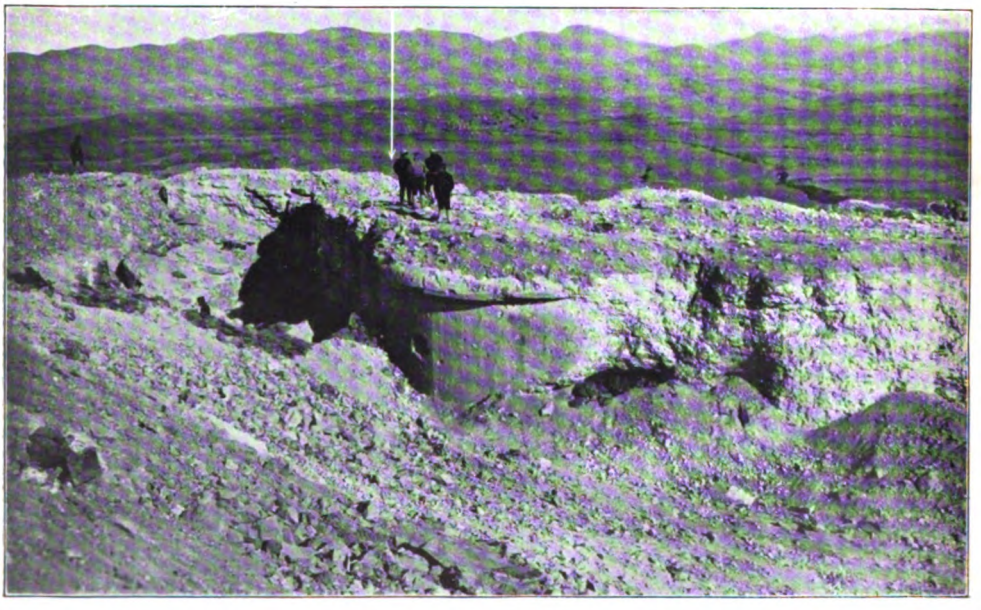
Fort Chi-kuan.

Observation post, O.C.
Japanese Naval Brigade.



TWO-STORIED CASEMATES IN GORGE, SHOWING DAMAGE INFLICTED FROM P.

Position of Russian countermine
fired on the 27th October, 1904.



COUNTERSCARP GALLERY OF FACE.

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breach. As a result of the various explosions, the chamber at X was completely wrecked.

The 30th October was the day of the general assault which has already been described;* and when this attack failed it was evident that the only way to break down the defence was to destroy the fort piecemeal. On the 31st, therefore, the besiegers fired two charges of high explosive against the face of the counterscarp gallery. These charges, each consisting of 225 lbs. of picric powder, were enclosed in barrels and rolled over the crest of the glacis into the ditch. The concrete of the face withstood the shock, and some of the defenders still clung to the gallery, shooting down a storming party which endeavoured to profit by the explosion to occupy the parapet.†

Inside the gallery the attackers fought their way step by step, although a large charge fired at Angle VI would, apparently, have cleared both the face and the long gallery on the eastern flank. That the Russians anticipated some such move is shown by the firing of a countermine at Angle VI on the 17th November. Listening should have told them that the Japanese were not working within effective range, and the only result they achieved was the partial wrecking of the counterscarp gallery.

The fighting in that narrow passage was of the most murderous description. The Japanese pushed forward their breastworks foot by foot, using iron plates, sandbags, tins filled with stones, or anything that would give cover. The Russians held out behind breastworks of sandbags, to demolish which a mountain gun was taken to the gallery in pieces and put together inside. It opened fire from near Angle I, at a range of only a few feet, and forced the Russians to retire round Angle VI into the long gallery. When inspection became possible the concrete overhead was found to be scored with deep furrows by the shells, and the blood with which walls, roof, and floor were splashed bore eloquent witness to the nature of the struggle. Before the end of November all the galleries were held by the besiegers; but the Russians, before finally evacuating them, blew up the subterranean passage leading into the fort, thereby wrecking the southern end of the long gallery.

Meanwhile the Japanese had made two exits into the ditch, one from the shattered chamber at X, and one from the low, arched opening Y; from these they sapped across to the foot of the escarp, where they made a secure lodgment. With the help of explosives a third exit was made about the 20th November at Z, the charge being placed outside the concrete, under cover of a pile of sandbags dropped from the loophole. A sandbag breastwork was built across the ditch from Z to the lodgment at the foot of the escarp. During the latter half of November a mine was driven into the escarp. No data are available as to this mine beyond the fact that it contained two charges. It was fired at 12.45 p.m. on the 26th November, and served as the signal for a

* See p. 77.
† See, however, p. 77, footnote.

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general assault, which was everywhere repulsed,* while at this particular fort the storming never got beyond the parapet.

Early in December a 6-inch mortar was mounted in a blinded emplacement in the captured work P, whence it battered the two-storied casemates in the gorge of Fort Chi-kuan. Shortly afterwards a second 6-inch mortar was brought up to the same position, but the shells inevitably struck the face of the casemates at a very acute angle, with the result that many glanced off without exploding. The vulnerable shoulder presented by the northern end of the casemates escaped without serious damage; but the two end ports on the upper floor, next to this shoulder, were knocked into one. A shell penetrated to the lower story through a port near the centre, and blew up some twenty feet of the floor overhead, while two or three other ports were damaged; but no serious injury was done to the structure.

Meanwhile, from the lodgment on the escarp a row of mines had been begun with a view to blowing away the whole parapet of the face. Two main galleries were driven, branching to take ten charges. The original number of charges proposed was eight, but it was decided to add two more. Very little attempt was made at countermining, nor were any determined sorties attempted; the only opposition offered was by rolling explosive charges from the parapet on to the lodgment and approaches. In this way a certain amount of loss was inflicted, but the mines were not greatly delayed and by the 18th they were ready for firing.† The total charge consisted of 1,600 lbs. of dynamite and 3,400 lbs. of guncotton. The weight and depth of the charges varied; the heaviest, amounting to about 1,000 lbs. of dynamite, being placed deepest, while the lightest, 180 lbs. of dynamite, was much nearer the surface.

At 2.20 p.m. on 18th December, the mines were fired. Owing to some failure in the firing circuit, the whole of the charges did not explode simultaneously, and some fifteen seconds elapsed before a second upheaval completed the destruction of the parapet. The debris rose to no great height, although an immense mass of earth was lifted, which would indicate that the average depth of the charges must have been considerable. At the same moment a heavy artillery fire was opened against the supporting works and the approaches to the fort.

The destruction of the face parapet.

The storming party, of about one battalion, was waiting in the counterscarp galleries, but the exits into the ditch were closed by the masses of earth thrown forward by the explosion, and it was some little while before a passage could be cleared. By that time the Russian artillery in the supporting works had come into action, and on entering the crater the assaulting column came at once under shrapnel fire. In the place of the parapet on the face there was now a huge, irregular crater, but the interior

* See p. 85.

† On the 15th December, General Kondratenko was killed in the fort. See p. 102.

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of the fort was undamaged, and although shaken, not unnaturally, by the unexpected explosion the men at once rallied and occupied the retrenchment. The stormers, therefore, on arriving at the edge of the crater, found themselves in the same position as those who had attacked on the 26th November. In face of them was a wire entanglement; beyond it was a breastwork mounting several machine guns and two or three pieces firing case shot. As on the former occasion, affairs reached a deadlock, the Japanese clinging to the crater, while the Russians held the retrenchment. Both sides poured in a hot artillery fire, hand-grenades were thrown, and the Japanese wooden guns fired their canisters of dynamite into the rear portion of the fort where the Russian reserves might be in waiting. The defenders replied with every conceivable weapon of destruction, including the war-heads of torpedoes which were fired from metal tubes.

Owing to shortage of ammunition on the Russian side, a duel of this description could have but one end. The garrison of the fort dwindled rapidly, it was difficult to find reinforcements, and of those who could be spared, many fell on the road owing to the accuracy of the Japanese shrapnel. To cross the ditch by the bridge, already partly shot away, was an almost hopeless task, and was attempted only by a few determined volunteers. Finally orders were issued that the fort should be held long enough to allow of its being mined, and that it should then be evacuated.

About midnight, the casemates were partly destroyed by mines, and in the small hours of the morning of the 19th December the survivors of the garrison withdrew, destroying what remained of the entrance bridge. The Japanese troops in the crater were at this time beginning to lose heart, and fresh men were brought up to the assault by General Tsuchiya in person; but they entered the fort only to find it unoccupied.

The 22nd Regiment, with two or three companies of the 43rd, was responsible for the attack during the hours of daylight, but it was a battalion of the 38th *Kobi* Regiment which first entered the fort. The Japanese losses amounted to about 800.

Two 4-pounder Hotchkiss guns, two 1-inch 5-barrelled Nordenfeldts, and four maxims fell into Japanese hands. There were also five field guns inside the fort, but they were beyond repair.

The issue of orders for the evacuation of Fort Chi-kuan proved to be the deciding factor in the siege, and led to the trial and disgrace of General Stessel. Undoubtedly the fort was in a desperate situation, but men could still be found willing, and even eager, to undertake its defence. General Smirnov was strongly against its evacuation and, although he was responsible for the defence of the fortress, he was not consulted when the final orders for its evacuation were telephoned to General Gorbatovski, commandant of the eastern defences, who was watching the fight from Q work.

Observations.

In itself the fort was of little value to the Japanese, since it was commanded by the works in rear to an extent which made it necessary to construct siege

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trenches inside it similar to those on the glacis, but the moral effect of its capture cannot be over-estimated.

The action of General Tsuchiya in placing himself at the head of his storming party, clearly indicates the feeling of the besiegers at this stage, but on the morning of the 19th December they found that they had at last accomplished a task which had come to be regarded as impossible.

On the other hand the Russians, for the first time during the siege, had given up a permanent fort and the garrison felt instinctively that this was the beginning of the end.

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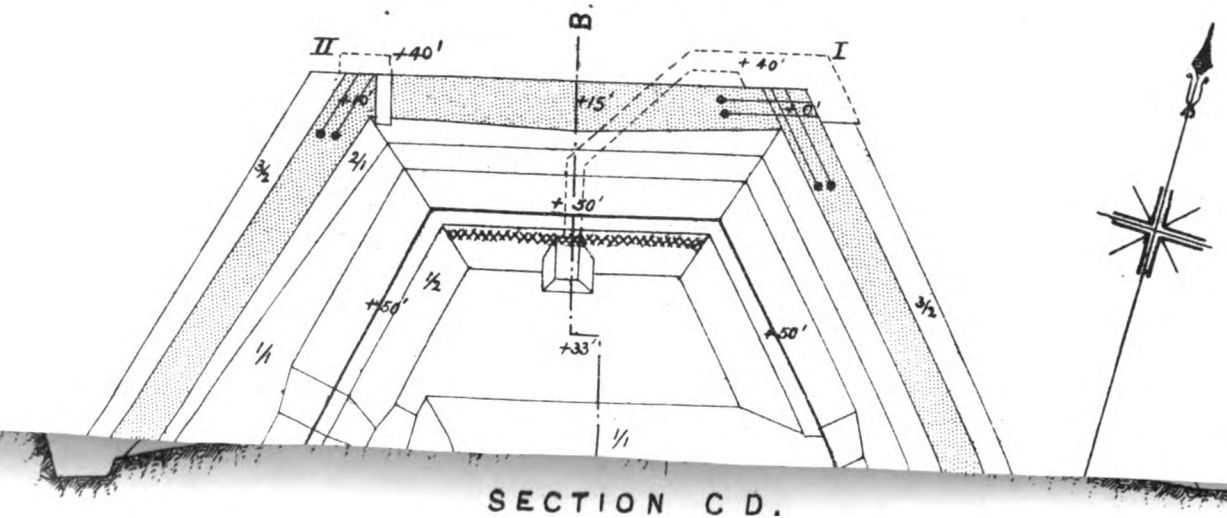
FORT ERH-LUNG.



SECTION C D.

Scale 100 Feet = 1 Inch.

0 50 100 200 300 Feet

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CHAPTER XXIII

THE ATTACK ON FORT ERH-LUNG.

FROM Plate XI it will be seen that so long as the counterscarp galleries of Fort Erh-lung were held the ditch could be thoroughly swept by fire, with the exception of the gorge near Angles III and VII, where in each case there was some dead ground caused by the convexity of the slope.

Description of Fort Erh-lung.

The flanking defences at I are explained by Plate XII.

At II a small concrete structure swept the western flank, but there was no underground connexion with the interior of the fort, a fact which detracted much from its value.

Near III and VII a concrete tunnel five feet high by three feet wide, acted both as a sallyport and as a drain.

Access to the fort could be obtained either across a temporary footbridge to the gorge bastion, or by a ramp in the salient of the bastion down the counterscarp into the ditch. From the ditch a flight of steps led to the bastion, but the main entrance to the fort was by an archway which led to the gorge casemates. Thence a tunnelled passage, nine feet high and nine wide, led by a flight of low steps to the interior of the fort, emerging from a T head just in rear of the cavalier. On the cavalier was a concrete battery, of which the design is shown in Plate XII, intended for four 6-inch guns on siege carriages. Before the end of the siege it had been utterly wrecked by bombardment.

As in the case of Fort Chi-kuan, the parapet was formed into a series of little splinter-proof chambers, with sandbag walls and shrapnel-proof overhead cover. A concrete casemate existed under the banquette of the face, and provided cover for that portion of the garrison of the parapet which was not on duty at the loopholes. It was supplemented by casemates of timber and earth placed at varying intervals. A wire entanglement ran in rear of the banquette of the face. The cavalier acted as a retrenchment. The ditch was cut in rock and, except at the flanking galleries, was revetted only for short distances, and then merely with dry rubble. The guns in the chambers flanking the ditches IV–III and VI–VII could also fire over the intervals on either side of the fort.

The casemates in the gorge formed the living quarters of the garrison, which consisted of eight officers and about three hundred men. The rooms were lighted with electricity from a generating station in rear, and water was laid on through a 1¼-inch pipe from

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a tank under cover some four hundred yards in rear. The pipe line was not protected from frost, and must soon have frozen even if it were not destroyed by artillery fire. The failure to provide any covered communication between the casemates and the front parapet was a serious oversight, and led to considerable loss of life.

The attack on the fort.

The operations which ended on the 26th October in the crowning of the counterscarp have already been described, and the narrative of the events which led up to the fall of the fort may be resumed from that point. The possible existence of countermines was apparently ignored by the Japanese who began, on the following day, to construct a network of trenches on the glacis, and to sink shafts against the counterscarp galleries from their advanced trench.* But before the parapet could be assaulted, it was necessary to deal with certain machine gun chambers which were situated about twenty feet above the bottom of the ditch and swept the face from the flank of Angle I. With this object, on the 29th October, explosives were hung in barrels against the face of the concrete from the Japanese trench above the galleries. The charges were fired by electricity and, although they did but little damage to the structure, are believed to have caused the evacuation of the chambers. On the following day came the first unsuccessful assault† on the fort.

A shaft was next sunk at *o*, the work being facilitated by the Russians who had broken through the concrete wall at that point, and had started a countermine gallery under the glacis. The rubble in which they worked was so loose that the excavation caused a subsidence of the surface and exposed the concrete of the counterscarp gallery. No attempt was made to fire the countermine, and the Japanese were able to explode a charge at the back of the concrete, wrecking the corner and blowing away the face of all the machine gun chambers. The Japanese then entered the galleries unopposed, made a hole through the wall at *p*, and obtained access to the ditch through the small arched opening in the angle; while the Russians fell back into the fort through the underground passage, which they then blocked with sandbags. The existence of this passage was not discovered by the Japanese until one night when an officer, who was reconnoitring the ditch, heard the Russians talking below.

Meanwhile, three other shafts were being sunk from the crest of the glacis, but it is not clear whether the intention of the Japanese was to fill the ditch by blowing in the counterscarp, or whether they were searching for galleries. The most easterly shaft exposed the concrete of the communicating passage, but no charge was fired there, because the Japanese were by that time in possession of the galleries and their further destruction would have been unnecessary. The next shaft was about one hundred and twenty feet from Angle I, or almost in the centre of the

* Plate XII will help to explain the operations against the counterscarp galleries.

† See p. 78.

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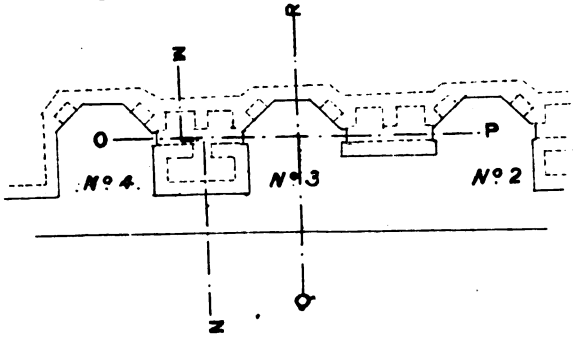
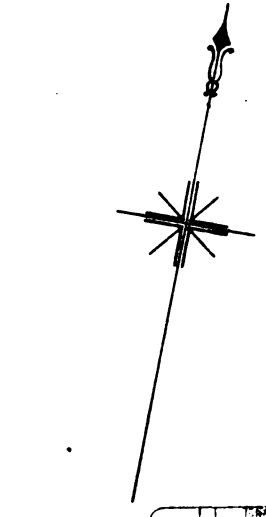
Plate XIII.

FORT ERH-LUNG.
GUN EMPLACEMENTS.





SECTION M N.

SECTION O P.

SECTION Q R.

SECTION Y Z.

Scale of Feet. 150 Feet = 1 Inch.

0 10 20 30 40 50 100 200

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face. Here, on the 20th November, a charge was fired which threw such quantities of debris into the ditch that passage became easy. An attempt was made the same evening still further to fill the ditch with hay and bundles of *kao-liang* stalks. The third shaft was not far from the concrete structure in Angle II. No charge appears to have been fired, but a short gallery was driven giving access to the ditch.

There were thus three means of reaching the bottom of the ditch, viz., from the arched opening in Angle I, from the mine crater in the centre of the face, and from the mined opening near Angle II. Of these the most important was that in the centre. The concrete structure at Angle II was not held by the Russians, and was used as Head-Quarters by a company of Japanese engineers.

On the night of the 20th–21st November a covered passage was begun from the trenches on the glacis through the crater to the escarp. The passage had a sandbag breastwork on either side, and was covered over with steel plates. By the evening of the 25th November a secure lodgment was effected at the foot of the escarp, and it was then decided to deliver a general assault on the 26th.* This attack, as already related, ended in a serious repulse, and from that date mines were driven into the face with a view to blowing up the parapet. For a whole month the Japanese made no further move, but during that time five galleries were pushed forty feet into the escarp, branching to take twelve charges. The original number of charges as proposed by the chief engineer was eight, but it was decided to increase them to twelve, distributing them at different levels along the whole length of the face parapet, deep charges alternating with shallow ones. The explosive used was dynamite, the total weight being 6,100 lbs., while individual charges varied from 180 to 1,000 lbs., the heaviest being placed deepest. A demonstration of countermining was made, but was not pressed, and no charge was fired. The attackers were, however, much worried by explosives which were rolled down from above, and in one instance did much damage by igniting a gallery.

The destruction of the face parapet.

The mines were fired on the 28th December. Although on the previous evening the listeners in the countermines had reported a cessation of work in the Japanese galleries, the suspicions of the defenders were not aroused, seeing that the usual slow bombardment was continued, and that grenades were thrown during the night. In the early morning one battalion from each regiment of the 18th Brigade moved into position for the assault, the remaining battalions being kept in reserve. Either by accident or design a small charge exploded about 9.30 a.m.; twenty minutes later a single Japanese scout dashed up to the crest of the parapet, took a hasty glance at the interior of the fort, and ran back before the Russians had recovered from their surprise At 10 a.m., the mines were fired.

The dust and smoke spread low over the fort and hill-top. In

* See p. 86.

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the advanced trenches the waiting stormers were protected from falling debris by a light roof of boards and scantling, which prevented any serious casualties, although in places it gave way. A huge crater had been formed along the whole face, and this was at once occupied by the Japanese. A few Russians who happened to be in the casemate under the parapet, were killed or taken prisoners but, as at Fort Chi-kuan, the interior of the fort was undamaged. On the cavalier the defenders made a gallant stand and for hours held the stormers at bay, although subjected to a very heavy bombardment from every class of artillery. Among other devices the Japanese dragged two mountain guns to the edge of the crater, and placed them in small pits. On either side of the muzzle of each gun sat a man with an iron plate, measuring about three feet by two. These shields were drawn apart while a shot was fired, and were closed again during the operation of loading.

The defenders of the cavalier could be supported without much difficulty from the tunnelled passage leading from the gorge casemates, but it was not found possible to make any counter-attack against the Japanese who were in occupation of the interior of the fort, and now numbered nearly one thousand. For a time the fight resolved itself into a test of endurance, each side clinging to its position under a heavy fire from the opposing artillery. During the day the garrison was reinforced, but the numbers available were still too small to drive out the enemy. Between 4 and 5 p.m. parties of Japanese advanced along the ditch on either flank, and a forward movement was made simultaneously from the crater. The survivors on the cavalier broke and fled into the gorge casemates, whence they could not be induced to stir; in fact, with the loss of the cavalier, all hope of recapturing the fort vanished, since men could only have emerged from the tunnel by twos and threes, and would have been shot down as fast as they came out.

From this time the artillery fire slackened on both sides, and after dark the survivors of the garrison evacuated the gorge casemates, setting fire to the woodwork before leaving, and falling back to the trenches running west from I Battery. Not content with this success the Japanese proceeded to make themselves secure against counter-attack by building covered communications from the crater to the cavalier and to the gorge parapet, which they occupied in strength.

On the Japanese side the casualties were approximately 1,000, the 19th Regiment suffering the more heavily; those of the garrison are not known.

With the fort the following pieces of artillery fell into the hands of the Japanese:—

4 6-inch guns on siege carriages.
8 field guns.
1 mountain gun.
30 one-pounder Hotchkiss guns,

and several maxims. Nearly all were unserviceable.

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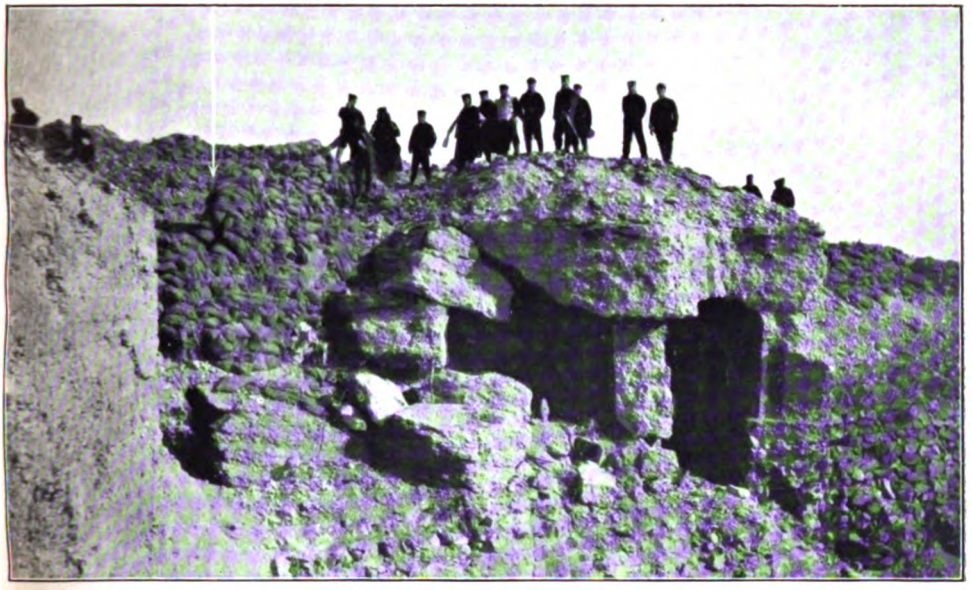
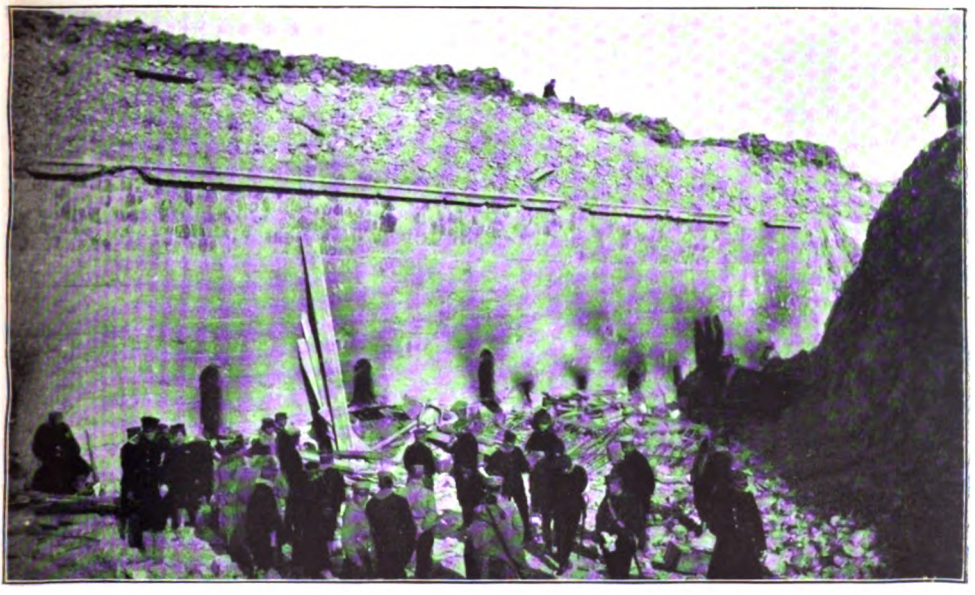
Fort Erh-lung.

Japanese sap.



GALLERIES OF EAST SHOULDER.



OUTSIDE OF CASEMATES OF EASTERN HALF OF GORGE.

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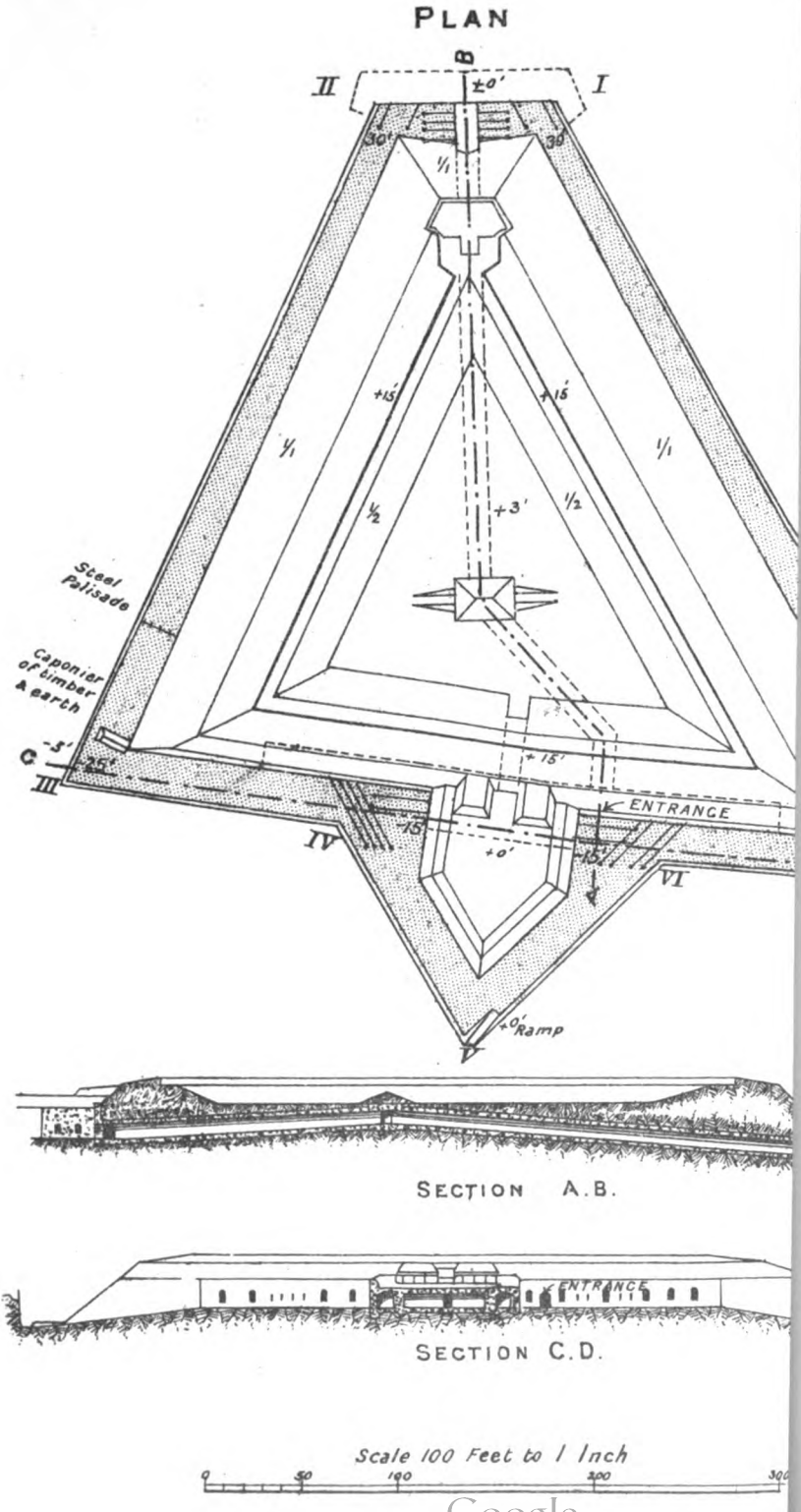
Plate XIV.



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CHAPTER XXIV.

The Attack on Fort Sung-shu.

The design of Fort Sung-shu was very simple as can be seen from Plate XIV.

This work was better situated than either Fort Chi-kuan or Fort Erh-lung, in that its glacis was at a uniform slope, and could be swept by fire from the parapet. The acuteness of the salient, however, rendered it impossible for the defenders to bring a very heavy fire to bear upon the northern slopes of the hill. To remedy this defect a pair of 6-inch naval guns was mounted in sandbag emplacements on the salient, and an advanced infantry trench was constructed on the exterior slope in front of them. But the trench could not be occupied while the guns were in action. These weapons did not take any active part in the defence until the middle of September, in fact it is doubtful whether they were ready before that time, and their life was of very short duration. For a few days they actively shelled the Japanese approaches against the fort, and engaged in duels with the guns of the Naval Brigade, but their position was so exactly defined that it was impossible to keep them in action, and in less than a fortnight both had been damaged beyond repair.

Description of the fort.

The ditch was cut in rock and was thoroughly swept by fire, the face being flanked by a caponier which also formed a communication with the counterscarp galleries, and was itself flanked by two rifle loopholes on either side; while each of the flank ditches was commanded by two machine gun ports. The ditches in the gorge were swept from the casemates. The escarp was at a slope of only 1/1; the counterscarp was at 4/1, except for the concrete on the face, which was vertical.

The ramp at V gave access to the ditch, whence the only means of entering the fort was by an underground passage just east of the bastion. The exit from this passage was protected by a sandbag breastwork which was built across the interior of the fort and acted as a retrenchment.

Owing to the steep slope the guns in the chambers flanking the gorge ditches IV–III and VI–VII, were also able to fire over the crest of the glacis on to the ground on either side of the fort, and thus acted as flank defence for the intervals.

The operations described in Chapter XVIII resulted, on October 30th, in the crowning of the counterscarp of Fort Sung-

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The attack on the fort.

shu, where, as before Fort Erh-lung, the possible existence of countermines was ignored.

The salient of this fort being very acute, the counterscarp on the face was correspondingly short. It was revetted with concrete throughout. Four shafts were sunk, and a tunnel was run behind the whole length of the counterscarp gallery, against which some half-dozen charges were placed.

On the 17th November, the charges were fired. The results were not very satisfactory, the strength of the concrete having been under-estimated and, although much damage was done to the trenches overhead, only one breach, at *q*, was made into the galleries. Through this opening access was obtained to the galleries, which were found unoccupied and partly filled with stones. A second entrance was made on the 18th November at *r*; but the Russians held the caponier, until driven out by the fire of a Hotchkiss gun, which was brought into the counterscarp gallery for the purpose. They then fell back into the fort, blocking up the underground passage as they retired.

On the night of the 21st–22nd November, the Japanese broke through the concrete face at S and S_1, in each case knocking the two loopholes into one opening, whence they obtained access to the ditch. A third opening was made through the concrete revetment of the counterscarp, about ten feet below the top, and immediately over the caponier. Attempts were made to build a slender bridge to the escarp, but the fire of light quick-firers in the fort, and of heavier artillery in other works, destroyed it as often as it was erected. Two covered passages, one on either side of the caponier, were then constructed across the ditch from S and S_1. As in the case of Fort Erh-lung they consisted of sandbag breastworks roofed over with steel plates, and with their aid a lodgment was effected at the foot of the escarp, but they were repeatedly destroyed and needed repair almost every night.

Here also mines were started under the parapet, after the failure of the third general assault. Two main galleries were driven, one on either side of the caponier, each of which branched into three, allowing of six charges in all.

In the attack on this fort the Japanese encountered some real resistance underground. The defenders sank countermines from the salient, and early on the morning of the 17th December fired a *camouflet* over the Japanese right-hand gallery, which was partly destroyed. At the same time a small sortie was made in the ditch, but was repulsed without difficulty. The Japanese retaliated by firing small charges which inflicted some loss upon the Russian miners. Further delays were caused by explosives rolled from the parapet, and it was not until the 30th December that the mines were completed and ready for firing.

The total charge consisted of about 3,000 lbs. of dynamite and 2,400 lbs. of powder, the charges being of dynamite and powder alternately, at a fairly uniform depth. In order to deceive the Russians, men were kept at work in a dummy gallery until the actual moment arrived for firing the mines, while the usual slow bombardment was not varied in any way. Meanwhile some of the

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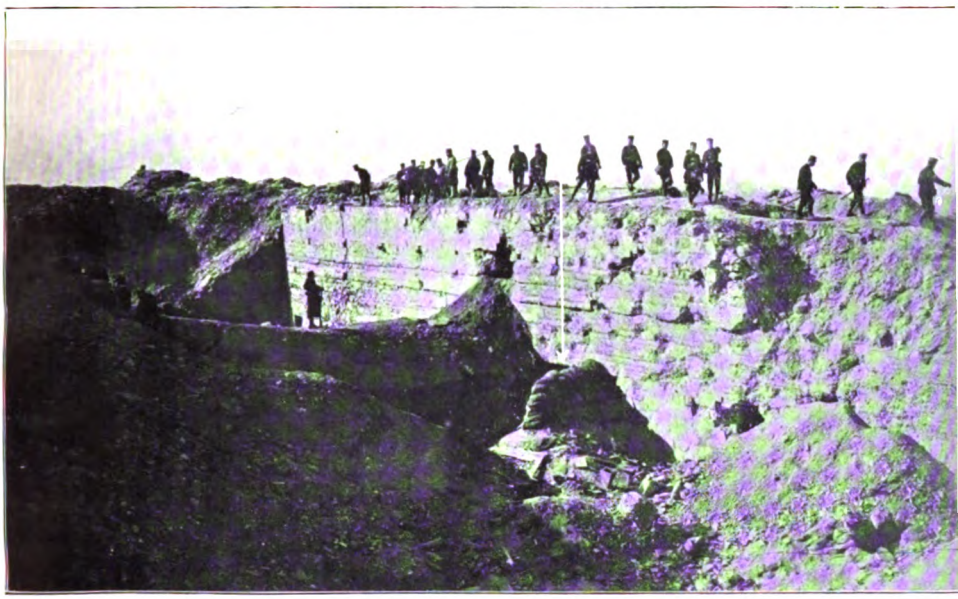
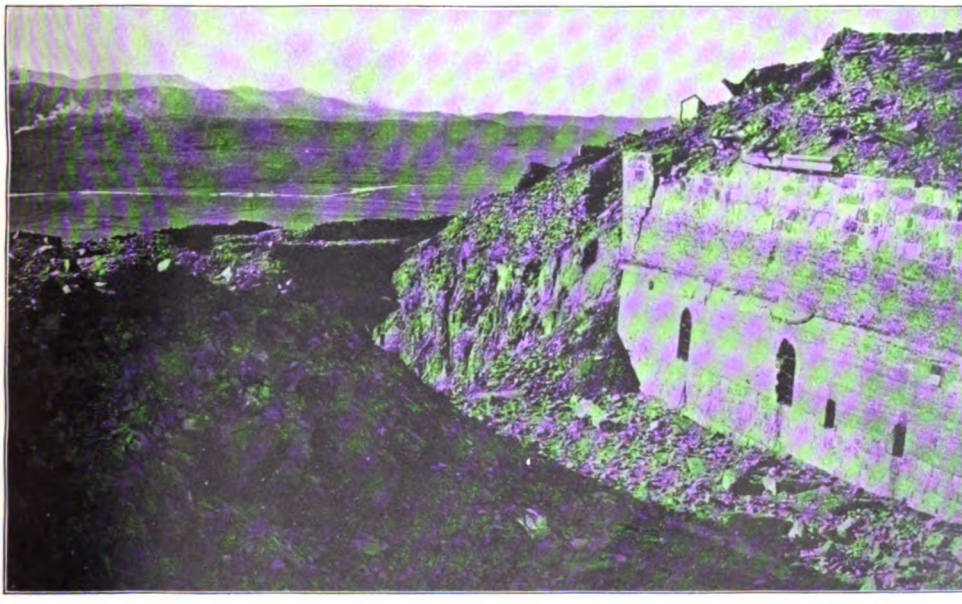
Fort Sung-shu.

Opening S.



COUNTERSCARP GALLERIES.



DITCH OF WESTERN HALF OF GORGE, SHOWING OUTSIDE OF CASEMATES.

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stormers waited in the counterscarp galleries and some, protected by a light wooden roof, in the trenches overhead.

At 10 a.m. on the 31st December, the mines were fired. The whole salient was carried away and debris was thrown to a great height, but again the interior of the fort was left untouched. The stormers at once dashed into the crater, and were about to open fire from its edge when a second explosion occurred. Everything was for a time obscured by vast clouds of smoke, and when they cleared away it became apparent that there was no further obstacle to be overcome. The tunnelled passage leading from the gorge casemates to the interior of the fort had been heavily mined by the defence, and some of the charges had in some way been fired at the very moment when the garrison, headed by the officers, was hurrying up the passage to occupy the retrenchment. Those men who were in the passage at the time were either buried amid the ruins or were blown through the opening into the ditch, where they were piled into one great heap of mutilated fragments. Thus perished the commander of the fort with one hundred and forty of his men.

The cause of the disaster is obscure. It was at first attributed to burning gases, which were said to have originated from the Japanese mines, and to have found their way along the underground passage until they ignited the contents of a magazine; but the resulting crater clearly followed the line of the passage, and indicated three distinct charges. Moreover, unexploded mines were afterwards discovered in the passage, and it is noticeable that nearly five minutes elapsed between the firing of the Japanese charges and the explosion in the fort. Taken together these facts would seem to indicate that the Russian mines must have been fired by some agency inside the fort.

The assaulting column quickly dashed across the interior of the fort and occupied the gorge parapet, where they mounted machine guns which bore on the ditches from IV to V and from VI to V (Plate XIV). The survivors of the garrison, sheltering in the gorge casemates, thus found themselves cut off from all hope of escape; but they were in telephonic communication with the staff of the fortress, and received instructions to the effect that any man who so wished might endeavour to escape, and that those who did not care to make the attempt might surrender. The telephone was then destroyed in order to prevent the Japanese from tapping the wire. Practically there was no choice for there was absolutely no chance of escape, and about 11.30 a.m. a white flag was thrust up from one of the windows; the solitary instance throughout the siege of the use of the white flag in token of surrender. For some time no notice was taken of the signal, and the Japanese maintained a hot artillery duel with the batteries in rear. At 1 p.m., the flag was lowered, but was raised again at 2 o'clock, and a few hours later, when the artillery fire slackened, two Russian officers and one hundred and sixty men were taken alive out of the ruins of the fort.

The attack was carried out by the 2nd Regiment, the Japanese casualties amounting to about one hundred and fifty men. Com-

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pared with those at Forts Chi-kuan and Erh-lung, these losses must be regarded as light; but the capture of Fort Sung-shu was simplified by the fact that it was not overlooked from heights in rear to the same extent as were the others.

The intention of the Japanese had been to push on and capture the Supporting Battery during the afternoon, but an advance beyond the fort was found to be impossible. Although the underground passage had been cleared sufficiently to admit of the entombed garrison climbing out of the casemates, it was still too much blocked by fallen masses of concrete to afford a satisfactory means of obtaining access to the gorge ditch. To overcome this difficulty, the ditch on the eastern flank was traversed during the night with a series of sandbag breastworks, so placed as to allow a few men at a time to work their way round them to the rear of the fort, where they would be in a position to make a further advance when required.

With the fall of Fort Sung-shu the last of the permanent works on the front of attack had been reduced, and General Nogi could feel that the reward for all the lives which had been sacrificed could not be long delayed. But the Chinese Wall still stood between him and his prize, and as yet the dogged courage of the defenders showed no sign of wavering.

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CHAPTER XXV.

THE SURRENDER. MAPS III/4 AND III/6.

DURING the night following the capture of Fort Sung-shu, the Japanese scouts of the 6th Brigade brought in news that the Chinese Wall between East Pan-lung and Fort Erh-lung was but weakly held. On his own initiative General Ichinohe, the commander of the 6th Brigade, advanced and succeeded in carrying the wall, and pushed forward until by daylight he was in firm occupation of the line East Pan-lung, H, I, height west of I, Fort Erh-lung. The Russians offered a strenuous resistance, but were compelled to fall back for want of reinforcements. The situation was now truly desperate, for with the Chinese Wall the Russians lost their main line of defence. Two battalions from the 6th Brigade were then told off to attack Wang-tai from the north; they were to be assisted by a battalion of the 44th Regiment, but only two of its companies actually went into the fight. Throughout the whole morning of the 1st January, 1905, a heavy artillery fire was maintained by both sides, and by 2.30 p.m. the three battalions of Japanese infantry were collected in the hollow east of H, where they suffered only from an occasional indirect shell.

Capture of Chinese Wall and Wang-tai.

At 3 p.m., the Japanese artillery concentrated its fire on the peak of Wang-tai, and maintained a very heavy bombardment for fifteen minutes when, in response to flags waved by the infantry on the slope, the fire died away until total silence reigned. A solitary Japanese scout crept up and looked over the line of trenches east of the peak. He returned, and at once a party of about twenty-five men, led by an officer, advanced up the hill towards the two guns which had been disabled on the 19th August.* The peak was reached without loss, but as soon as a Japanese head showed over the sky line a sputter of fire broke out and forced the attackers to take cover outside the parapet, whence they began to throw grenades. The Japanese gunners, eager to assist the infantry, opened on the peak, but in response to flag signals the artillery fire ceased and, at 3.25 p.m., some of the assaulting party went over the crest, where they endeavoured to plant a Japanese flag. As it happened the staff refused to enter the hard soil, and the men got back over the parapet only just in

* See p. 45.

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time to escape an explosion which seemed to lift the whole top of the hill, although it really occurred in a magazine several yards on the Russian side of the crest. Thenceforward little resistance was offered to the occupation of Wang-tai by the Japanese, and before sunset they were able to open a reverse rifle fire against N Battery, to which the defenders still clung. M Battery was abandoned.

At nightfall on the 1st January, 1905, therefore, the Japanese held the line Fort Chi-kuan, Wang-tai, H, I, Fort Erh-lung, Fort Sung-shu, while the Russians were still in possession of Chi-kuan Battery, Q, N, the heights some four hundred yards south and west of Wang-tai, the height five hundred yards south-south-east of Fort Sung-shu, and the Supporting Battery.

Unknown to General Smirnov, General Stessel had meanwhile despatched a *parlementaire* to General Nogi with a view to a surrender. At the same time a letter was sent to Admiral Wiren, who now commanded the fleet, telling him that negotiations had been opened, and that only one night remained in which to destroy his stores and ships which, although crippled by the Japanese bombardment, were as yet by no means past repair.

After dark on the 1st January, 1905, orders were sent from General Stessel to the effect that the works from N to Chi-kuan Battery, inclusive, were to be evacuated. General Gorbatovski protested, pointing out that he was in command on the front attacked and that, although the situation at N was critical, Chi-kuan Battery was still tenable. In reply, he was told to carry out his orders, and the works were accordingly abandoned. Chi-kuan Battery was blown up by its garrison, the explosion shaking houses at a distance of six miles, and reducing the battery to a shapeless heap of ruins. The Japanese at once advanced and occupied the vacated works at N, Q, R, and Chi-kuan Battery.

Evacuation of Chi-kuan Battery.

As soon as the Japanese agreed to open negotiations the firing on both sides died away, and the silence of the night was broken only by the sound of the explosions as ships and guns were destroyed.* The Japanese, however, were hard at work entrenching themselves in their new positions.

General Smirnov could do no more than protest, for the resolution of the troops gave way the moment that they heard of the proposal to surrender, and no reliance could be placed upon them if it were decided to remove General Stessel from his command by force. No blame can be attached to the men; they had been tried beyond human endurance, and the prospect of relief from their sufferings snapped at once the bonds of discipline.

With daylight the victorious Japanese swarmed out of their trenches up to the hills forming the newly captured line between Chi-kuan Battery and Fort Sung-shu. A few Russians came out and mingled with their conquerors, but the majority of the defenders remained in the vicinity of those works which still remained in their possession. An attempt on the part of the

* Early on the morning of the 2nd January the battleship *Sevastopol* was towed out into deep water and sunk.

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Japanese to occupy Signal Hill ended in some brisk fighting, and caused them about a hundred casualties.

Meanwhile Colonel Reuss, at this time acting as chief staff officer of the Kuan-tung District, was entrusted by General Stessel with the conduct of the negotiations, while on the Japanese side General Idichi, chief of the staff of the Third Army, was in charge. The conference met in the village of Shui-shih-ying, and was opened by the Japanese, who handed in a draft of the proposed terms, written in English. A certain amount of argument followed, and the Russians were given an hour for discussion, at the end of which time the Japanese asked for their decision. They held out for easier conditions, the main point being that the garrison should not be made prisoners of war. The Japanese declined to listen to the proposed amendments, but they allowed some trivial increase in the comforts of the officers, and signified that they were not prepared to discuss the question further. An agreement was therefore signed of which the text is given in Appendix F. General Stessel was at once informed, and instructions were issued that the destruction of material must be stopped. As soon as the Russian troops heard the news a large number of them flung away their arms and began to loot the town; the streets were filled with drunken men, and many disgraceful scenes occurred before order was restored.

Capitulation.

By the evening of the 4th January, the uncaptured fortifications had been handed over to the Japanese, and on the 5th the Russians began to leave the fortress, the various units assembling near Fort Cha-kua-tzu whence they were marched to Chang-ling-tzu railway station. By the evening of the 7th, all the prisoners of war had been taken over. Their number was found to exceed by many thousands the total which the Japanese had been led to expect, the official statement giving the strength of those who marched out at 878 officers and 23,491 men, whereas it had been understood that barely 10,000 men were available inside the fortress. The discrepancy is partly accounted for by the fact that many left the hospitals without permission, in order that they might quit the scene of their sufferings at the earliest opportunity, although many of them were really unfit to travel. In addition there were nearly 4,000 non-combatants, and about 15,000 sick and wounded were left in the hospitals.

The prisoners.

As the Russian troops withdrew, a portion of the Japanese army entered the town for the purpose of keeping order, and there could be no higher testimony to the discipline of the victors than the total absence of outrage of any kind A few of the civilian inhabitants had occasion to complain of insolence on the part of individual Japanese soldiers, and there were isolated cases of drunkenness, but of looting or pillage there was none and perfect order reigned in the streets. The army as a whole was strictly forbidden to enter the town, and it was not until the 13th January, 1905, that General Nogi made his formal entry, accompanied by detachments representing every unit of the besieging force. Many Japanese never approached nearer to the town than

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the line of works captured on the 1st January, since from the moment that the surrender was assured the transfer of the besieging army to the north was begun.

Court-martial on senior officers.

Although the surrender was at first considered by the world at large to have been unavoidable, it was not long before rumours were heard to the effect that the means of defence had not been entirely exhausted, and General Stessel, instead of being a popular hero, found himself assailed by charges of incapacity and corruption. The affair ended in a court-martial on the senior officers of the defence, General Stessel being indicted on no less than ten counts, on all of which he was convicted.* Unfortunately it is certain that the strictures were justified, but no discredit attaches to the men, who did everything that was humanly possible to uphold the honour of the Russian army. The siege had lasted for five months since the date of close investment, and had cost the Japanese a loss in killed and wounded of nearly sixty thousand men.† For one hundred and fifty-four days the hills round Port Arthur had been the scene of a struggle which, for valour and determination, will bear comparison with the most famous episodes in history. In a war which will always be remarkable for the stubborn character of the fighting, this siege was the most dramatic incident, and it would be difficult to say whether it reflected greater glory upon victor or vanquished. In some respects the leadership may have failed to reach the highest standard; but long after the less creditable circumstances have been forgotten, the splendid courage which eventually carried the Japanese to victory, and the no less splendid resolution with which the forts were held until they were reduced to shapeless masses of rubble, will stand before the soldiers of all nations as brilliant examples of devotion. The countries which produced the heroes of Port Arthur may well be proud of their sons.

* The finding of the court is given in Appendix H. Appendix G shows the quantities of stores and war material remaining in the fortress at the time of the capitulation.

† See Appendix D. These losses are calculated from the end of June only; those of the Russians are as yet unknown.

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APPENDIX A.

Comparative Table of Names used in Describing the Defences of Port Arthur.

The system adopted to distinguish the land defences has been the use, as far as possible, of Chinese names originally given to the works, or to the hills on which they stood. The Japanese applied these designations, but used their own pronunciation, which differs entirely from the Chinese, and frequently resulted in a name of abnormal length.

To works which had no Chinese name, the Japanese name or a distinguishing letter has been applied whenever such was available.

The Russian nomenclature of the land defences led to much confusion, and has been used only where no other could be found.

The numbers of the coast batteries are those used by the Russians.

Name used in this volume.	Japanese name.	Russian name.	Remarks.
Akasaka Yama ...	Akasaka Yama	Flat Hill	
An-tzu Shan East	Sho-an-shi-zan	C Battery	
Chi-kuan Battery	Higashi-kei-kwan-zan Ho-dai.	B Battery	
Chi-kuan Peak ...	Higashi-kei-kwan-zan	Great Hill	
Chi-kuan South-East.	Higashi-kei-kwan-zan To-nan.	Fortification No. 2 ...	
Chien Shan ...	Ken-zan	Khu-in Shan	
Division Hill ...	—	Division Hill	
East Pan-lung ...	Pan-ru-san Higashi Ho-dai.	Redoubt No. 1	
Feng-huang Shan	Ho-o-zan	Wolf Hills	
Fort Cha-kua-tzu	Ko-ko-shi Ho-dai ...	Fortification No. 5 ...	
Fort Chi-kuan ...	Higashi-kei-kwan-zan Kita Ho-dai.	Fort No. 2	
Fort Erh-lung ...	Ni-ru-san Ho-dai ...	Fort No. 3	
Fort Pai-yin ...	Hyaku-gin-zan Kyu Ho-dai.	Fort No. 1	
Fort Sung-shu ...	Sho-ju-san Ho-dai ...	Fortification No. 3 ...	
Fort Ta-an-tzu Shan.	Dai-an-shi-zan Ho-dai	Fortification No. 4 ...	
Fort Ta-yang-kou North.	Nishi-tai-yo-ko Kita Ho-dai.	Fort No. 5	
Fort Yi-tzu Shan	I-shi-zan Ho-dai ...	Fort No. 4	
G	G (or Hachi-maki Yama)	Open Caponier No. 3 ...	
H	H	Zaliterny Battery ...	
Head-Quarter Hill	—	—	This hill was described by the Japanese as "Height 1,200 metres S.W. of Tien-han-kou."

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COMPARATIVE TABLE OF NAMES.—*Continued.*

Name used in this volume.	Japanese name.	Russian name.	Remarks.
Hsiao-ku Shan ...	Sho-ko-zan	Sia-gu Shan	
I	I	Howitzer Battery ...	
Kobu	Kobu Yama	—	
M	M	—	
N	N	Little Eagle's Nest ...	
Namako Yama ...	Namako Yama	Long Hill	
Naval Ridge ...	—	Naval or Rocky Ridge	
174 Metre Hill ...	—	Angle Hill	
P	P	Open Caponier No. 2 ...	
Pai-yin Battery ...	Hyaku-gin-zan Kita Ho-dai.	A Battery	
Q	Q	Kuropatkin Lunette ...	
R	R	Zaliterny Battery ...	
Solovev Hill ...	—	Solovev Hill	
Sung-shu Supporting Battery.	Sho-ju-san Shin Ho-dai.	Tumulus Battery ...	
Te-ku Shan ...	Tai-ko-zan	Da-gu Shan	
Ta-yang-kou South.	Nishi-tai-yo-ko Minami Ho-dai.	D Battery	
Temple Redoubts	—	Temple Redoubts ...	These works were described by the Japanese as "Redoubts south of Shui-shih-ying."
203 Metre Hill ...	Ni-rei-san, or Ro-ya-san.	High Hill	
Wang-tai	Bo-dai	Eagle's Nest	
Waterworks Redoubt.	Kuropatkin Ho-dai ...	Waterworks Redoubt ...	The Russian name has been adopted in order to avoid confusion with Q work.
West Pan-lung ...	Ban-ru-san Nishi Ho-dai.	Redoubt No. 2	

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APPENDIX B.

Order of Battle of the Third Japanese Army during the Siege of Port Arthur.

General Officer Commanding: General Baron Nogi.
Chief of the Staff: Major-General Idichi.
Commander of the Siege Artillery: Major-General Teshima.
Commander of the Engineers: Colonel Sakakibara.
Commander of the Naval Brigade: Captain Kuroi.

——	Battalions.	Squadrons.	Field and mountain guns.	Siege guns.	Engineer Companies.	Remarks.
1st Division.						
Commander: Lieutenant-General Matsumura.						
1st Brigade, Major-General Baba.						
1st Regiment	3	—	—	—	—	Major-General Yamamoto had been killed on the 24th September, 1904.
15th Regiment	3					
2nd Brigade, Major-General Nakamura.						
2nd Regiment	3	—	—	—	—	Major-General Nakamura was severely wounded during the night 26th-27th November, 1904.
3rd Regiment	3					
1st *Kobi* Brigade, Major-General Oki.						
1st *Kobi* Regiment...	2	—	—	—	—	Attached to the 1st Division.
15th *Kobi* Regiment	2					
16th *Kobi* Regiment	2					
Cavalry.						
1st Cavalry Regiment	—	3	—	—	—	Two of these squadrons left the Third Army during November.
Artillery.						
1st Artillery Regiment (field guns)	—	—	36			
Engineers.						
1st Engineer Battalion	—	—	—	—	3	

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ORDER OF BATTLE.—*Continued.*

——	Battalions.	Squadrons.	Field and mountain guns.	Siege guns.	Engineer Companies.	Remarks.
7TH DIVISION.						
Commander: Lieutenant - General Oseko.						
13th Brigade, Major-General Yoshida.						
25th Regiment	3					
26th Regiment	3					
14th Brigade, Major-General Saite.						
27th Regiment	3					
28th Regiment	3					
ARTILLERY.						
7th Artillery Regiment (field and mountain guns).	—	—	24	—	—	This was a special composite regiment comprising 2 batteries of field guns and 2 of mountain guns.
ENGINEERS.						
7th Engineer Battalion	—	—	—	—	3	
The divisional cavalry did not accompany the 7th Division to Port Arthur.						
9TH DIVISION.						
Commander: Lieutenant - General Oshima.						
6th Brigade, Maj.-General Ichinohe.						
7th Regiment	3					
35th Regiment	3					
18th Brigade, Major-General Hirasa.						
19th Regiment	3					
36th Regiment	3					
CAVALRY.						
9th Cavalry Regiment...	—	—	—	—	—	This regiment left the Third Army early in the siege, only a detachment remaining at Port Arthur.
ARTILLERY.						
9th Artillery Regiment (mountain guns).	—	—	36			
ENGINEERS.						
9th Engineer Battalion	—	—	—	—	3	
11TH DIVISION.						
Commander: Lieutenant - General Tsuchiya.	—	—	—	—	—	Lieut.-General Tsuchiya was severely wounded on the 26th November, 1904, and was replaced by Lieut.-Gen. Samejima.
10th Brigade, Major-General Yamanaka.						
22nd Regiment	3					
44th Regiment	3					

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ORDER OF BATTLE.—*Continued.*

	Battalions.	Squadrons.	Field and mountain guns.	Siege guns.	Engineer Companies.	Remarks.
22nd Brigade, Major-General Kamio.						
12th Regiment	3					
43rd Regiment	3					
CAVALRY.						
11th Cavalry Regiment	—	—	—	—	—	This regiment left the Third Army early in the siege, only a detachment remaining at Port Arthur.
ARTILLERY.						
11th Artillery Regiment (mountain guns).	—	—	36			
ENGINEERS.						
11th Engineer Battalion	—	—	—	—	3	
ARMY TROOPS.						
4th *Kobi* Brigade, Major-General Takenouchi.						
8th *Kobi* Regiment	2					
9th *Kobi* Regiment	2	—	—	—	—	This regiment was sent north during October, 1904.
38th *Kobi* Regiment	2					
FIELD ARTILLERY.						
2nd Field Artillery Brigade, Major-General Nagata.						
16th Artillery Regiment... ...	—	—	24	—		
17th Artillery Regiment... ...	—	—	24	—	—	This regiment was sent north during November, 1904.
18th Artillery Regiment... ...	—	—	24	—		
SIEGE ARTILLERY.						
1st Regiment.						
1st Battalion	—	—	—	24	—	4·7-in. bronze guns.
2nd Battalion	—	—	—	16	—	6-in. howitzers.
2nd Regiment.						
3rd Battalion	—	—	—	24	—	6-in. mortars.
4th Battalion	—	—	—	28	—	6-in. mortars
3rd Regiment.						
5th Battalion	—	—	—	10	—	Four 4-in. Krupp guns. Six 4·7-in. bronze guns.
6th Battalion	—	—	—	24	—	6-in. mortars.
7th Battalion	—	—	—	24	—	3·5-in. mortars.
Independent	—	—	—	18	—	11-in. howitzers.
HEAVY FIELD ARTILLERY REGIMENT.	—	—	—	32	—	4·7-in. howitzers.
NAVAL BRIGADE	—	—	—	35	—	Four 6-in. guns. Ten 4·7-in. guns. Twenty-one 12-pr. guns.
ENGINEERS.						
1st *Kobi* Engineer Company... ...	—	—	—	—	1	
From Guard Division } Attached	—	—	—	—	1	
From 6th Division } to Third	—	—	—	—	1	
From 8th Division } Army	—	—	—	—	1	
Total	60	3	204	235	16	

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APPENDIX C.

Russian Forces in the Kuan-tung Peninsula.

Commander of the Fortified Zone, Chin-chou to Port Arthur: Lieut.-General Stessel.
Chief Staff Officer, Fortified Zone: Colonel Reuss.
Commandant of the fortress of Port Arthur: Lieutenant-General Smirnov.
Chief of the Fortress Staff: Colonel Khvostov.
Commander of the Fortress Artillery: Major-General Bieli.
Commander of the Fortress Engineers: Colonel Grigorenko.

At the time that the fortress was cut off, on 12th May, there were in the Kuan-tung Peninsula:—

The 4th East Siberian Rifle Division, Commander, Major-General Fock, consisting of the 13th, 14th, 15th, and 16th Regiments.
The 7th East Siberian Rifle Division, Commander, Major-General Kondratenko, consisting of the 25th, 26th, 27th, and 28th Regiments of "fortress" Infantry.
Detachments from the 3rd East Siberian Rifle Division, which were formed into two companies.
The 5th East Siberian Rifle Regiment,* detached from the 2nd East Siberian Rifle Division at Vladivostok.

The total of the above was 27,250.

There were, in addition:—

The 3rd, 4th, and 7th Depot Battalions.†
The 21st and 36th Companies, of the Frontier Guards.
The telegraph company belonging to the 2nd East Siberian Rifle Division.
The Kuan-tung Sapper Company.
The Port Arthur Mining Company.
The 4th East Siberian Rifle Artillery Brigade (4 batteries).
The 7th East Siberian Rifle Artillery Brigade (3 batteries).

* Less the 1st Company, which formed part of the Legation Guard at Peking.

† These depot troops are formed on cadres detached from the units of the standing army, and are filled up by men of the reserve (who are not required for the mobilization of the active units), by recruits, or by men of the four youngest classes of the Militia. They serve to keep the units of the standing army up to full strength in time of war.

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Three battalions of Fortress Artillery.
One horse battery of 2·24-inch guns (six pieces).
4th squadron of the 1st Verkhne-Udinsk Cossack Regiment, and about 50 mounted men drawn from various units.

The total of the land forces amounted to 41,600 officers and men.

In addition to the above, there were the shore detachments of the Port Arthur Naval Squadron, formed into ten companies, amounting to about 4,000; and the Town Guard, composed of volunteers from among the civil population. These were formed into 12 infantry and 1 mounted companies, with a total strength of about 2,500.

The grand total of the combatants in the Kuan-tung Peninsula amounted therefore to approximately 47,000 officers and men.

The number of guns and howitzers, of 4-inch calibre and upwards, was :—

For the coast defences	95
For the land defences	187
Total heavy guns ...	282

Of light quick-firing guns and machine guns, the number was 80.

Of field guns there were :—

In the fortress	146
With the 4th E.S.R. Division	32
With the 7th E.S.R. Division	24
Total field guns ...	202

The number of guns in and around Port Arthur at the beginning of May was approximately as follows :—

Fortress Artillery.

	Guns.
In the fortress	386
At Nan Shan	50
At Kerr Bay	2
Field Guns	16
In Reserve	39
Total ...	493

Field Artillery.

	Guns.
4th East Siberian Artillery Brigade ...	32
7th „ „ „ „ ...	24
Battery of 2·24-inch guns	6
Field howitzer battery	4
Total	66

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In addition to the above armament, about 143* guns were supplied by the navy during the siege.

The number of pieces shown by the Japanese as taken over after the capitulation, amounted to 546. This includes only serviceable armament. The Russian figures include many Chinese guns which were of little value, and were not used in the defence. Moreover, many pieces were destroyed by the Japanese fire.

* These include the "Baranovski" guns mentioned on p. 14.

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APPENDIX D.

Losses of the Japanese Third Army during the Siege of Port Arthur.

Table of casualties, June, 1904, to end of siege.

Date.	Killed.		Wounded.		Missing.		Total.		Grand Total.
	Officers.	N.C.O.'s and men.	Officers.	N.C.O.'s and men.	Officers.	N.C.O.'s and men.	Officers.	N.C.O.'s and men.	
1904.									
June 26th	—	25	4	129	—	—	4	154	158
July 3rd to 5th ...	1	30	8	169	—	—	9	199	208
July 26th to 31st ...	24	664	115	3,267	—	—	139	3,931	4,070
Aug. 7th to 9th .	11	254	50	971	—	—	61	1,225	1,286
Aug. 13th to 15th	14	252	42	895	—	—	56	1,147	1,203
Aug. 19th to 24th	165	4,779	378	10,313	—	—	543	15,092	15,635
Sept. 19th to 22nd	51	1,332	131	3,828	—	—	182	5,160	5,342
Oct. 26th to 31st ...	27	495	89	2,652	8	464	124	3,611	3,735
Nov. 26th to Dec. 6th.	171	3,679	431	11,059	12	1,140	614	15,878	16,492
December 17th ..	—	22	1	79	—	—	1	101	102
December 18th ...	1	122	20	703	—	14	21	839	860
December 26th ...	—	27	2	120	—	—	2	147	149
Dec. 28th and 29th	6	231	26	876	—	48	32	1,155	1,187
December 31st ..	—	44	2	149	—	—	2	193	195
1905.									
Jan. 1st and 2nd ...	6	194	22	722	—	14	28	930	958
Approximate number killed and wounded at their daily work in the trenches.	—	—	—	—	—	—	200	6,000	6,200
Total	477	12,150	1,321	35,932	20	1,680	2,018	55,762	57,780

Note.—The "missing" represent men blown to pieces, buried by explosions, or left in the Russian works after a repulse. Of the latter only a very few were made prisoners.

Table showing number of sick, June, 1904, to end of siege.

	Officers.	N.C.O.'s and men.	Total.
Injuries	13	940	953
Dysentery	14	1,680	1,694
Enteric fever	27	533	560
Beri Beri	170	20,853	21,023
Other diseases... ...	211	9,328	9,539
Total	435	33,334	33,769

The total of killed, wounded and sick, was therefore 91,549.

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APPENDIX E.

Losses of the Russian Forces during the siege of Port Arthur.

Few details are available as to the Russian losses during the siege.

A reliable Russian authority gives the losses of the army up to the 21st September, including those at Nan Shan, as :—

65 officers, 3,600 men, killed or died of wounds.
„ „ 3,500 „ in hospital.
106 „ 4,300 „ recovered and returned to duty.

The navy had lost 1 officer and 56 men killed, 4 officers and 231 men wounded.

At the time of the capitulation there were in hospital about 15,000 wounded and sick, whilst over 24,000, of whom many were wounded, marched out of the fortress, a total of 39,000 (Chapter XXV).

Assuming the strength of the Russian forces at the beginning to have been 47,000, and excluding the losses at Nan Shan, the number of those who died or were killed during the siege is found to be about 7,000.

Of the civilian inhabitants there were killed :—

Europeans—13 men, 6 women, 1 child.
Chinese—34 men, 4 women.

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APPENDIX F.

The Capitulation.

The text of the capitulation, which was formally signed at 9.45 p.m. on the 3rd January, 1905, ran as follows:—

Article 1.—All the Russian military and naval officers and men, volunteers, and Government officials who are in the fortress and port of Port Arthur shall be made prisoners of war.

Article 2.—All the fortifications and batteries, all warships and vessels, arms and ammunition, horses, all other materials for war purposes, official buildings, and all descriptions of Government property shall be handed over as they stand to the Japanese army.

Article 3.—If the Russian force agrees to the provisions of the above two articles, it should, as guarantee of its agreement, withdraw its garrisons from the fortifications and batteries on Yi-tzu Shan, An-tzu Shan East, Ta-an-tzu Shan, and the whole range of heights to the south-east, and hand them over to the Japanese army by noon on the 3rd January.

Article 4.—In case it is observed that the Russian army or navy have destroyed any of the objects mentioned in Article 2 which existed at the time of signing this agreement, or that they have otherwise changed the condition of those objects, the Japanese army will break off negotiations and resume freedom of action.

Article 5.—The Russian military and naval authorities at Port Arthur shall prepare and hand over to the Japanese army a chart showing the disposition of the fortress of Port Arthur, a chart of fougasses, submarine mines, and other hidden dangers, a table of military and naval organization at Port Arthur, a roll of military and naval officers with their posts and full names, a roll of civil officers with their posts and full names, a list of military corps, of warships, of ordinary vessels and boats, and of their crews, and a list of the ordinary inhabitants, with their sexes, races, occupations, and number.

Article 6.—Arms (including those carried by individual combatants), ammunition, all military materials, official buildings, all descriptions of government property, horses, warships, ordinary vessels, and boats, and all things (except private property) on board them, shall be arranged in accordance with their present positions. The proceedings for their transfer shall be agreed upon between the Japanese and Russian Commissioners.

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Article 7.—The Japanese army will, in honour of the gallant defence made by the Russians, allow the Russian military and naval officers, as well as the civil officials attached to the Russian army and navy, to wear swords and take with them such personal effects as may be necessary for their subsistence. With regard to the above mentioned officers, officials, and volunteers the Japanese army will permit them to go home if they subscribe to a written oath not to take up arms until the close of the war, and to refrain from doing any action whatever inconsistent with the interests of the Japanese army. Every such military and naval officer shall be allowed to take with him an orderly, who shall be specially released on parole.

Article 8.—The military and naval non-commissioned officers and men, as well as the volunteers who have been disarmed, shall, in their uniform and with portable tents and necessary personal effects, assemble under the command of their respective officers at a place to be designated by the Japanese army. The Japanese Commissioner shall fix all details.

Article 9.—The members of the sanitary and accountant corps of the Russian army and navy at Port Arthur shall continue to discharge their respective duties of taking care of the Russian sick, wounded, and prisoners, and of feeding and providing for them under the superintendence of the Japanese sanitary and accountant corps, until such time as may be deemed necessary by the Japanese army.

Article 10.—Detailed rules for the questions relating to the disposal of non-combatants, and to the transfer of the administrative and financial business of the municipality together with the documents referring thereto, and for the enforcement of this agreement, shall be provided in the supplementary stipulations to this agreement. The supplementary stipulations shall have the same validity as this agreement.

Article 11.—This agreement shall be in duplicate, one copy to be retained by the Japanese and the other by the Russian army. It shall be put in force immediately after signing.

Supplement to the Capitulation.

(Received in Tokyo on the 4th January, 1905.)

Article 1.—The following commissions shall be appointed by both Japanese and Russian armies, in order to carry out the provisions of the capitulation:—

1. Commission relating to Article 6 of the Capitulation; commission relating to the fortifications and forts, and to the arms and ammunition existing on land; commission relating to the war vessels and ordinary vessels; commission relating to the war material in the trenches; and commission relating to the removal of dangerous objects.
2. Commission relating to Article 8 of the capitulation.
3. Commission relating to Article 9 of the same.

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Article 2.—The above-mentioned commissions shall meet at the entrance to the city on the main road leading out of Port Arthur, on the northern foot of Quail Hill, at noon on the 3rd January, and take up their respective duties.

Article 3.—The military and naval officers and men in the fortress of Port Arthur shall assemble, according to arrangements which will be made by the Japanese army on receipt of the table of their organization, and proceed to the neighbourhood of Fort Cha-kua-tzu, their head reaching there at 9 a.m. on the 5th January; they will then receive orders from the commission relating to Article 8. On this occasion the officers and officials attached to the Russian army and navy shall wear their swords, but the non-commissioned officers and men shall not bear arms. All the members of this force must bring with them provisions for one day.

Article 4.—The Russian officials who do not belong to the army or navy shall form themselves into groups according to their respective offices, and follow the groups mentioned in the preceding article. Those officials who have not been volunteers shall be released without parole.

Article 5.—Such number of officers and men, or of persons of corresponding rank, as may be needed for the purpose of delivery, should be left in each fortification, each fort, each building, each storehouse, each place where materials are stored, each warship and each vessel. These individuals shall wear distinguishing badges supplied by the Japanese army.

Article 6.—Such military or naval officers or volunteers or officials as may, after 9 a.m. on the 4th January, continue to wear swords, or refuse to repair to the rendezvous assigned by the Japanese army, shall be dealt with suitably by the Japanese army.

Article 7.—The personal effects which the officers and officials belonging to the army or navy may carry, in virtue of Article 7 of the capitulation, may, when deemed necessary, be examined. The weight of such personal effects shall approximately correspond to that of the baggage allowed to the officers and officials of the Japanese army.

Article 8.—The military and naval hospitals and hospital ships in Port Arthur shall be first inspected by a Japanese commission, and then placed under regulations to be determined by the said commission.

Article 9.—All private individuals shall be free to pursue their avocations in peace and tranquility. Such of them as may wish to leave the place, shall be free to take with them all their private property. In case the families of military and naval officers and officials desire to leave the place, the Japanese army will afford them all possible facilities.

Article 10.—In case it is considered necessary to order the departure of any private individuals residing within the fortress of Port Arthur, such individuals shall retire at a time and by roads designated by the Japanese army.

Article 11.—The Russian commission relating to Article 10 of

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the capitulation shall acquaint the corresponding Japanese commission as to the past and present condition of the administrative and financial business, at the same time handing over all the documents relating thereto.

Article 12.—The Japanese prisoners of war in Port Arthur shall be handed over to the Japanese commission designated in Article 1 of the present capitulation at 3 p.m. on January 3rd.

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APPENDIX G.

Artillery, Ammunition, and Supplies remaining in Port Arthur at the time of the Capitulation.

The following figures are taken from evidence which was given before the court-martial on the leaders of the defence, but are approximate only.

Artillery and ammunition.

Ordnance fit for use, of various calibres, and including 20 machine guns, and 20 Chinese guns, 295 pieces.

For 10-inch guns	common shell	130	rounds.
„ 9-inch „	„ „	270	„
„ 6-inch Naval guns (high velocity)	„ „	900	„
„ „ „ „	shrapnel	1,400	„
„ 6-inch fortress guns	common shell	450	„
„ „ „ „	shrapnel	1,400	„
„ 4-inch „ „	common shell	270	„
„ „ „ „	shrapnel	970	„
„ various guns of smaller calibre	common shell	1,400	„
„ „ „ „ „	shrapnel	3,900	„
„ „ „ „ „	case shot	400	„
„ 11-inch howitzers	common shell adapted from unexploded Japanese projectiles	130	rounds.
„ 9-inch „	common shell	230	„
„ 9-inch „	„ „	300	„
„ 6-pounder coast-defence guns...	„ „	4,000	„
„ „ „ „ ...	shrapnel	4,000	„
„ „ „ „ ...	case shot	500	„
„ 6-pounder short caponier guns	„ „	2,000	„

For the naval 12-pounder about 200 rounds per gun, and for the 1-pounder and 4-pounder quick-firers an ample supply.

Of small-arm ammunition there remained about 2,500,000 rounds.

Note.—The shrapnel shell were to a large extent useless owing to the lack of time fuzes, and much of the ammunition was of inferior quality.

The Japanese state that they captured 82,670 projectiles; this number must include a quantity of old Chinese ammunition.

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Supplies.

Flour	40 days' supply.
Groats	22 „ „
Biscuit	15 „ „
Dried vegetables ...	3 months' supply.
Salt beef	2 „ „
Sugar	15 days' supply.
Salt and tea	Sufficient for several months.
Horses	2,500 head.

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APPENDIX H.

FINDING OF THE COURT-MARTIAL ON THE OFFICERS RESPONSIBLE FOR THE SURRENDER OF PORT ARTHUR.

Generals Stessel, Reuss,* Fock, and Smirnov were found guilty of the following offences, viz.:—

(*a*) *Lt.-General Stessel*:—

(1) Of not having complied with the commander-in-chief's order, received on the 3rd July, 1904, to hand over the fortress to the fortress commandant and join the army in the field.

(2) Of interfering with the duties and responsibilities of the commandant of the fortress, in contravention of the viceroy's order No. 339, of 27th April, 1904, in the following instances:—

(*a*) Removing goods from the fortress
(*b*) Appointing a medical official ...
(*c*) Removing a hospital ... ...
(*d*) Dismissing an official ... ...
(*e*) Suppressing a newspaper ...
(*f*) Discontinuing work upon the 2nd and 3rd lines of defence

} without reference to the commandant.

(3) Of not taking suitable measures for victualling the fortress, in the following respects:—

(*a*) Not increasing the reserve of vegetables.
(*b*) Not requisitioning cattle and horses.
(*c*) Neglecting to carry out the resolution passed in favour of increasing the meat ration by the use of horse-flesh.

(4) Of not taking measures to suppress the issue of "notes"—written in a sarcastic and irritating style—by Lieut.-General Fock, as being calculated to injure the *moral* of the defence.

(5) Of rendering reports inconsistent with the facts to the commander-in-chief (27th and 31st May) and to the viceroy (30th May), to the effect that he personally was present and was handling the troops with energy, that ammunition had run short, and that the retirement was in good order, whereas—

* This officer was promoted to the rank of major-general between the date of the surrender and the holding of the court-martial.

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(*a*) During the battle of Chin-chou (Nan Shan), he was at Port Arthur, and took no personal part in the fighting.

(*b*) There was a large amount of ammunition at Nan-kuan-ling station.

(*c*) The retreat to Nan-kuan-ling was hasty and in disorder.

(6) Of misrepresenting facts, with a view to making them appear more favourable than the actual circumstances, in that he reported, on the 28th May, 1904, "General Fock's force is slowly falling back"—whereas that retirement was precipitate and was continued to the outskirts of the fortress, thereby failing to cover the road by which the retirement from Dalny was being carried out.

(7) Of misrepresentation, to his own advantage, in reporting (14th June, 1904) to the commander-in-chief " . . . I am always present at all possible engagements," whereas between the 8th February and 14th June there had been no engagements with the Japanese, except the battle of Nan Shan (where he was not present), and the bombardments—during which the whole of the inhabitants shared the danger.

(8) Of reporting (with a view to justifying the premeditated capitulation) to the Emperor, on the 29th December, 1904, "by the capture of Fort No. 3 (*i.e.*, Fort Erh-lung), the Japanese have made themselves masters of the whole north-east front, and the fortress can only hold out a few days longer. We have hardly any ammunition left . . ." Whereas the Council of War sitting on the very same day, had decided by a large majority to continue the defence to the uttermost, and Generals Bieli and Nikitin had declared that there was still ammunition available.

(9) Of knowingly and falsely recommending Lieut.-General Fock and Major-General Nadyein for the 3rd Class of the Order of St. George in respect of their service at the battle of Nan Shan; and Colonel Reuss for the 4th Class of the same order—well knowing that those officers had done no services worthy of those decorations.

(10) Of meditating the surrender of the fortress to the Japanese, notwithstanding the opinion of the Council of War of the 29th December, and without convening a further Council (in accordance with Regulations for Fortresses, para. 62, and Army Order No. 358, of 1901), in that he, between 3 and 4 p.m. on the 1st January, 1905, sent to the Japanese commander a proposal to enter into negotiations for the surrender of Port Arthur, before he had exhausted all possible means of defence, whereas the number of the troops and the amount of supplies surrendered prove that the defence might have been prolonged. After which, he assented to General Fock's

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proposal to evacuate the Small Eagle's Nest (N), the Kuropatkin lunette (Q), and Battery B (Chi-kuan Battery), weakened the defensive strength of the fortress. And on the following day, the 2nd January, he empowered Colonel Reuss to conclude the capitulation, without giving him any definite instructions as to the terms which might be accepted; in consequence of which Colonel Reuss signed terms unworthy of the dignity of Russia. And further he, General Stessel, did not fulfil the obligations of his oath and military honour, in that having delivered up the fortress into the hands of the enemy, he did not share the lot of the garrison (in accordance with Regulations for Fortresses, p. 63, and Army Order, No. 358, of 1901) by becoming a prisoner of war with them.

(*b*) *Colonel Reuss* was found guilty of co-operating with General Stessel in carrying out his measures for the surrender of the fortress, while it was still possible to continue the defence—first, at the meetings held on the 8th and 29th December (by exaggerating the drawbacks of the situation, and the uselessness of further defence); secondly, by prematurely preparing, and on the 1st January, 1905, dispatching a letter to General Nogi proposing to open negotiations; and thirdly, by not demanding definite instructions as to the terms to be accepted, but signed the terms proposed by the Japanese, on the same day, though they were unworthy of the dignity of Russia. By these actions he co-operated with General Stessel in delivering the fortress into the enemy's hands.

(*c*) *Lieut.-General Fock* was found guilty—

(1) In that, notwithstanding having received, on the 27th February and 19th May, 1904, definite orders to defend the Nan Shan position (with the 5th, 13th, and 14th East Siberian Rifle Regiments immediately available) to the utmost, and also the fact that General Stessel himself had undertaken the defence of Ying-cheng-tzu Bay (in rear of the position).

(*a*) On the morning of the 26th May, he moved the 15th Regiment to that bay to oppose any Japanese landing there, and he himself did not arrive on the position attacked, until about 2 p.m.;

(*b*) Of four regiments concentrated at Nan Shan, he only engaged one, thus exposing it to defeat in detail;

(*c*) He not only did not make use of his reserve, but stopped the movement of two battalions which had been sent up by General Nadyein;

(*d*) Without having exhausted all the means of defence, he sent a telegram to General Stessel, with a view to inducing that officer to order a retirement, whereas a large amount of ammunition was available at Nan-kuan-ling; and

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(*e*) Having received General Stessel's order to retire under cover of darkness, he began the retirement by daylight, thus subjecting his force to heavy losses.

He thus prematurely delivered the fortified position into the hands of the Japanese.

(2) During the fighting on the 21st August, 1904, having received from his immediate superior, the commandant of the fortress, an order to move two battalions of the 14th East Siberian Rifle Regiment to the advanced forts on the north-east front, he did not at once comply with the order, and did not himself proceed with this last portion of the reserve under his orders.

(3) During the period 22nd August—16th December, 1904, when not actually employed in any military duties, he took upon himself to issue a series of "notes," criticizing officers who were not under his orders, in an offensive manner, subversive of discipline and detrimental to the *moral* of the garrison.

(4) Having been appointed, on the 16th December, to the command of the land defence of the fortress, and finding that it was impossible to continue to hold Fort No. 2, he did not report the fact to the commandant of the fortress, his own immediate superior officer, but to the commander of the fortified *rayon*; and then, having received General Stessel's assent, without even reporting the fact to the commandant, on the 18th December, he ordered that fort to be evacuated and demolished.

(5) Being in command of the land defences of the fortress, and being aware of General Stessel's intention of surrendering it, before all the resources of the defence were exhausted, he co-operated with General Stessel in carrying out the said intention—viz.,

On the 1st January, 1905, he reported to General Stessel the necessity for immediately opening negotiations with General Nogi; and then, after the dispatch of a *parlementaire*, on his own initiative and without reference to the commandant, ordered General Gorbatovski (commanding the eastern front of the defence) under threats of drastic measures, to evacuate Battery B (Chi-kuan Battery), the Small Eagle's Nest (N), and the Kuropatkin lunette (Q), though he (Lieut.-General Fock) was fully aware that the evacuation of those works would place the fortress in a very disadvantageous position, in the event of the negotiations being broken off, and thus enabled the Japanese to demand unfavourable and degrading terms.

(*d*) *Lieut.-General Smirnov* was found guilty, in that,

(1) Suspecting (after the evacuation of Fort No. 2 on the 18th December, 1904), the existence of an agreement

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between Generals Stessel and Fock, with a view to bringing the fortress into such a condition as to justify surrender, he did not at once remove Lieut.-General Fock from his command (by virtue of the powers conferred upon him by Army Order No. 358, of 1901, Regulations for Fortresses) and generally take energetic measures to frustrate the accomplishment of their design, but confined himself to sending a telegram to the commander-in-chief, requesting confirmation in the full powers of a commandant, or that he might be relieved from further responsibility.

(2) While knowing of the dispatch of General Stessel's letter to General Nogi, on the 1st January, 1905 he did not (in accordance with Army Order No. 358 of 1901, Regulations for Fortresses) assemble a Committee of Defence, and did not suggest to General Stessel a strict compliance with Article 62 of the same regulations, and also that the decision of the Council of the 29th December (in favour of continuing the defence to the utmost) should be adhered to and carried out.

Signed at St. Petersburg, this 18th June, 1907.

(Signed) RILKE, LIEUT.-GENERAL,

Judge Advocate-General.

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APPENDIX I.

ARMAMENT TABLE OF MAPS NOS. III/2, III/4 AND III/6.

JAPANESE SIEGE BATTERIES, 22ND AUGUST, 1904. MAP NO. III/2.

Distinguishing letter.	Armament.								Remarks.
	Naval 4·7-in. guns.	Bronze 4·7-in. guns.	Krupp 4·2-in. guns.	Naval 12-pr. guns.	6-in. howitzers.	6-in. mortars.	4·7-in. howitzers.	3·5-in. mortars.	
E	2	—	—	—	—	—	—	—	
F	—	—	—	10	—	—	—	—	
G	4	—	—	—	—	—	—	—	
H	—	—	—	2	—	—	—	—	
K	—	—	—	—	—	—	12	—	
K_1	—	—	—	—	—	—	4	—	
M	—	24	—	2	—	—	—	—	
N	—	—	—	—	16	—	—	—	
Q	—	—	4	—	—	—	—	—	
S	—	6	—	—	—	—	—	—	
U	—	—	—	—	—	—	—	24	
V	—	—	—	—	—	38	—	—	
W	—	—	—	—	—	6	—	—	
X	—	—	—	—	—	28	12	—	
Y	—	—	—	4	—	—	—	—	
Total ...	6	30	4	18	16	72	28	24	Two additional naval 4·7-in. guns were not yet emplaced.

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RUSSIAN ARMAMENT ON FRONT OF ATTACK. MAP NO. III/4.

Distinguishing name, number, or letter.	Armament.												Remarks.
	Naval 6-inch guns.	6-inch (3-ton) guns.	6-inch (2-ton) guns.	Naval 4·7-inch guns.	4·2-inch siege guns.	Naval 12-pr. guns.	Field guns.	4-pr. Q.F. guns.	1-pr. Q.F. guns.	1-pr. 5-barrel revolving guns.	9-inch howitzers.	6-inch howitzers.	
Sung-shu Supporting Battery.	—	—	—	—	3	2	4	5	4	—	—	4	
Fort Sung-shu	2	—	—	—	—	—	—	—	—	—	—	—	In addition to numerous small quick-firers, &c.
*1	—	—	—	—	—	—	4	—	—	—	—	—	
2	—	—	1	—	—	—	—	—	—	—	—	—	
3	—	—	—	—	—	—	2	—	—	—	—	—	
4	—	—	—	—	—	—	—	1	—	—	—	—	
5	—	—	—	—	—	—	1	—	—	—	—	—	
Fort Erh-lung	—	—	4	—	—	—	—	—	—	—	—	—	In addition to numerous small quick-firers, &c.
6	—	—	—	—	—	—	1	—	—	—	—	—	
7	—	—	—	—	—	—	—	1	—	—	—	—	
8	—	—	—	—	—	—	2	—	—	—	—	—	
9	—	—	—	—	—	—	1	—	—	—	—	—	
10	—	—	—	—	—	—	—	2	—	—	—	—	
11	—	—	—	—	—	—	1	—	—	—	—	—	
12	—	—	—	—	—	1	—	—	—	—	—	—	
Naval ridge	—	—	—	—	—	6	—	—	—	—	—	—	
G	—	—	—	—	—	—	2	—	—	—	—	—	
West Pan-lung	—	—	—	—	—	2	4	—	—	—	—	—	
East Pan-lung	—	—	—	—	—	4	—	—	—	—	—	—	
P	—	—	—	—	—	—	4	—	—	—	—	—	
Fort Chi-kuan	—	—	—	—	—	—	—	—	—	—	—	—	Armament unknown but consisted of field guns, small quick-firers, &c.
Q	—	—	1	—	—	—	4	1	—	—	—	—	
Kobu	—	—	—	—	—	—	2	—	—	—	—	—	
Chi-kuan Battery ...	—	4	—	—	—	—	1	—	—	—	—	—	
13	—	—	—	—	—	—	3	—	—	—	—	—	
I	—	—	—	—	—	—	—	—	—	—	4	—	
H	—	—	4	—	—	—	—	—	—	—	—	—	
14	—	—	—	—	—	—	1	—	—	—	—	—	
Wang-tai	2	—	—	—	—	—	—	—	—	—	—	—	
M	1	—	—	—	—	—	2	—	—	—	—	—	
N	—	—	—	—	3	—	—	—	—	—	—	—	
R	2	—	—	—	—	—	—	—	—	—	—	—	
16	—	—	—	—	—	—	—	2	—	—	—	—	
17	—	2	—	—	—	—	—	—	—	—	—	—	
18	—	—	—	—	—	—	—	2	—	—	—	—	
Chi-kuan Peak	—	—	—	2	—	—	—	2	—	—	—	—	
Chi-kuan south-east ...	—	—	—	1	—	4	4	—	—	—	—	2	
19	—	—	—	—	—	—	2	—	—	—	—	—	
20	—	—	—	—	—	—	—	1	—	—	—	—	
21	—	—	1	—	—	—	—	—	—	—	—	—	
22	—	—	—	—	—	—	—	1	—	—	—	—	
23	—	—	—	—	—	—	—	—	—	2	—	—	
24	—	—	1	—	—	—	—	—	—	—	—	—	
Pai-yin Battery	—	—	4	—	—	—	—	—	—	1	—	—	
Total	7	6	16	3	6	19	45	18	4			6	

* These numerals refer to the figures in green on Map No. III/4.

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JAPANESE SIEGE BATTERIES, 2ND JANUARY, 1905. MAP NO. III/6.

Position or Distinguishing letter.	Armament.											Remarks.
	Naval 6-in. guns.	Naval 4·7-in. guns.	Bronze 4·7-in. guns.	Krupp 4·2-in. guns.	Naval 12-pr. guns.	11-in. howitzers.	6-in. howitzers.	6-in. mortars.	4·7-in. howitzers.	3·5-in. mortars.	
A	—	2	—	—	—	—	—	—	—	—	
B	—	—	—	—	—	4	—	—	—	—	
C	—	—	—	—	5	—	—	—	—	—	
D	4	—	—	—	—	—	—	—	—	—	
F_1	—	—	—	—	4	—	—	—	—	—	From F (Map III/2).
F_2	—	—	—	—	5	—	—	—	—	—	From F (Map III/2).
F_3	—	—	—	—	2	—	—	—	—	—	From F (Map III/2).
G_1	—	4	—	—	—	—	—	—	—	—	From G (Map III/2).
H_1	—	—	—	—	2	—	—	—	—	—	From H (Map III/2).
J	—	2	—	—	—	—	—	—	—	—	
K	—	—	—	—	—	—	—	—	—	—	
L	—	—	—	—	—	—	—	—	16	—	
M	—	—	12	—	2	—	—	24	—	—	
M_1	—	—	6	—	—	—	—	—	—	—	From M.
M_2	—	—	6	—	—	—	—	—	—	—	From M.
N	—	—	—	—	—	—	8	—	—	—	
N_1	—	—	—	—	—	—	4	—	—	—	From N.
N_2	—	—	—	—	—	—	4	—	—	—	From N.
O	—	—	—	—	—	2	—	—	—	—	
P	—	—	—	4	—	4	—	—	—	—	
Q	—	—	—	—	—	—	—	—	—	—	
R	—	—	6	—	—	2	—	—	—	—	
S	—	—	—	—	—	—	—	—	—	—	From S (Map III/3).
T	—	—	—	—	—	4	—	—	—	—	
U	—	—	—	—	—	—	—	—	—	12	
U_1	—	—	—	—	—	—	—	—	—	12	From U.
V	—	—	—	—	—	—	—	14	—	—	
W	—	—	—	—	—	2	—	6	—	—	
X	—	—	—	—	4	—	—	28	—	—	
Y	—	—	—	—	3	—	—	—	—	—	
Akasaka Yama	—	2	—	—	—	—	—	—	—	—	
Ta-ping-kou	—	—	—	—	—	—	—	—	4	—	
Total	4	10	30	4	27	18	16	72	20	24	The number of 4·7-in. howitzers had decreased since August, owing to damage sustained.

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APPENDIX J.

Organization of the Third Army as a Siege Force.

In Chapter XVII, it was mentioned that at the beginning of September, 1904, the Japanese Third Army was organized as a siege force. This change necessitated certain modifications in command, administration, and armament, of which some details are given in the following pages. In personnel, the principal alteration was the appointment of Major-General Teshima to command the siege artillery, and of Colonel Sakakibara to command the engineers.

General Officer Commanding the Siege Artillery.

The general officer commanding the siege artillery directly controlled the siege batteries, the Field Howitzer Regiment, and the Naval Brigade. His staff consisted of one colonel, one major, and one orderly officer. The 2nd Field Artillery Brigade formed an independent command, under a major-general who took his orders direct from the staff of the army.

The divisional generals controlled their own divisional artillery, which could only be used by General Teshima with the special sanction of the army staff. On the other hand siege guns and field howitzers were often, for special purposes, detached from the command of the general officer commanding the siege artillery and placed under the orders of divisional generals.

In addition to his command duties, General Teshima performed the functions of chief ordnance officer. The three divisional generals and the commander of the 2nd Field Artillery Brigade applied to him for any ammunition which they might require, and as he was in close touch with the commander-in-chief of the Third Army he was able to adjust their probable requirements to his own.

Supply of ammunition and material.

Approximate rules were laid down as to the amount of ammunition to be kept at the base, at the advanced depot, and by the various units, but these rules were not strictly observed; for example, before an assault ammunition would be pushed as far to the front as possible, whereas during quiet intervals supplies and material were allowed to take precedence of ammunition.

The Naval Brigade drew its ammunition from the fleet under naval arrangements, the general officer commanding siege artillery

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arranging for its transport by rail, and assisting, when so requested, to move it from railhead to the naval advanced depot.

The general officer commanding the siege artillery controlled the supply to the divisions, and to all the artillery, of the ordinary field engineering material, such as sandbags, timber, wire, and tools, but not of special siege material, such as hand-grenades and mining gear, which had to be manufactured locally, and were dealt with by the engineer park of the army. The engineer park, however, drew its raw material through the general officer commanding the siege artillery, and held any surplus stores not immediately required by the divisions. General Teshima also administered the replacement or local repair of damaged material, guns, carriages, harness, etc. He applied to the War Office in Tokio for all that he required, and the home authorities arranged for supply and transport as far as Dalny, where everything was taken over by the ammunition parks, of which there were four, one for each division and one for the siege train.*

Divisional ammunition parks.

Each park was in charge of a major, with a staff of one captain of artillery and one of engineers, whose duty was to assist with technical knowledge. Part of the park was at the base and part at the advanced depot. The normal supplies of ammunition kept up by the three divisional parks at Dalny were approximately 1½ million rounds of small arm ammunition for each division, and 4,000 rounds for each field or mountain artillery regiment of 36 guns, and at the advanced depot a similar amount both of small arm and of artillery ammunition. This amount, however, fluctuated considerably.

In addition to ammunition and artillery material the parks supplied their divisions with ordinary engineer material, and carried out all minor repairs in excellent workshops, of which some were already in existence at Dalny, and others were improvised both there and at the advanced depot. Broken wheels, tools, harness, rifles, and even gun carriages were often repaired in these shops. Badly damaged material, if repairable, was returned to Japan. The duties of the divisional ammunition parks were therefore confined to work in the repairing yards, to the transport of ammunition and material between the ships and the railway, to their reception and storage at the advanced depot, and to their subsequent issue on voucher to the divisional ammunition columns.

Divisional ammunition columns.

In the supply of ammunition and material, the divisional ammunition columns formed the next echelon on the way to the fighting units; they were combined into an ammunition battalion under a lieutenant-colonel.

These columns were subdivided into sections according to the position of the various units which they supplied, and worked between the advanced depot and the regimental reserves of

* For purposes of supply the siege train was treated as a division, whilst the 2nd Field Artillery Brigade and the Field Howitzer Regiment were attached to the 1st Division. A naval officer at Dalny attended to the supply of the Naval Brigade.

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artillery or the battalion reserves of infantry. For convenience and in order to avoid casualties, intermediate depots were established at suitable distances from the units supplied; beyond these intermediate depots the work of supply was usually carried out at night. The amount of ammunition kept at the intermediate depots varied according to probable requirements, and it often happened that there was a considerable accumulation of ammunition in the battalion and regimental artillery reserves, as well as at the intermediate depots. If required, the pack ponies carrying the battalion reserve, and the ammunition wagons forming the regimental artillery reserve, were ready to assist their ammunition columns.

Siege train ammunition park.

The siege train ammunition park at Dalny was merely a forwarding agent to the main siege train ammunition park at the advanced depot, where the park was divided into three sections, under the control of a lieutenant-colonel.

The first section was charged with minor repairs to guns and carriages, with fitting up the drugs* on which the heavy siege pieces were transported, with fixing bolts and screws to platforms, etc., etc. It was provided with a saw mill, forges, and the necessary workshops. The second section fuzed all shell, and filled the common shell for the 11-inch howitzers.† The third section removed guns, carriages, ammunition, and material from the railway trucks, and placed them on the drugs, narrow-gauge tramway, or other means of transport to their destination. For this purpose a 15-ton gyn was placed astride of the line, and unloading platforms were built.

Siege train ammunition column.

All material when ready for transportation, was taken over from the siege train ammunition park by the siege train ammunition column (which was also organized in several sections) and was carried on the narrow gauge tramway to the intermediate regimental depots half a mile to a mile in rear of the siege batteries. Carts and ponies were sometimes used for light loads, but as a rule the transport was effected on trollies propelled along the tram lines by men. For the 11-inch howitzers there were no intermediate depots, the tramway being carried right into the batteries.

Stocks of ammunition for siege train.

The 11-inch howitzers being coast defence ordnance, no regulation existed as to the number of rounds which should be kept in stock. For other siege pieces it was ordered that six hundred rounds should be kept at the advanced depot and intermediate regimental depots. A further twenty to forty rounds per piece were kept in expense magazines in the batteries, and one hundred and sixty to two hundred rounds per piece were stored in a handy magazine one hundred to two hundred yards

* A drug is a small but strong trolley used for the movement of heavy weights.

† All high-explosive shell, and common shell up to 6-inch calibre, were sent filled from Japan.

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in rear. The commanding officer of each company was responsible for having two days' supply in or about the batteries, the minimum being laid down as one hundred and eighty rounds per piece, but the actual amount held depended on the rate of fire ordered by the general officer commanding the siege artillery. For instance, if a piece were ordered to fire one hundred rounds in one day, the officer in charge would be expected to complete up to two hundred rounds from the intermediate regimental depot. The ammunition was carried to the battery magazines by the personnel of the company, either by carts and ponies or by hand. Some eight hundred rounds were in the first instance sent from Japan to Dalny with each piece of ordnance.

The Chief Engineer.

The chief engineer had no executive command over the engineers of the army, who were under the command of the divisional generals; while the balloon, searchlight, and telegraph units, which acted as army troops, were under the orders of the chief of the staff, who was advised by special engineer officers as to their employment.*

The chief engineer's duties consisted in advising General Nogi as to the siege works so as to co-ordinate the progress of the whole, in ensuring that impossible tasks were not set to the troops, and in seeing that every engineer unit bore its fair share of work and casualties. He was undoubtedly handicapped by the impetuosity of some of the junior commanding officers, and it is probable that had more attention been paid to his counsel, some of the later disastrous repulses might never have been incurred.

The divisional engineers were employed chiefly on such special siege work as sapping and mining. The work of widening and deepening trenches was almost entirely carried out by infantry, while the Naval Brigade and artillery built their own batteries, and laid the tramways to them, engineers being used only for work requiring special skill, such as the framing of timber for magazines and blindages. The officer commanding a divisional battalion of engineers took his orders from the general commanding his division but received technical advice from the chief engineer during the periodical inspections by that officer.

Divisional Engineers.

One of the most useful branches of the advanced depot was the engineer park, which was provided with workshops in which any new invention was worked out and manufactured. For example, during the early stages of the siege, body shields were made from boiler plate; latterly, they were manufactured from nickel steel in Japan, whence they were sent to the front. Hand-grenades, wooden mortars and their ammunition, loophole shields, bamboo scaling ladders, etc., were manufactured

Engineer park.

* Normally there is a bridging section to each divisional battalion of engineers. But there was no need for bridging before Port Arthur, and the equipment was therefore left at Dalny, the troops being employed on ordinary engineer duties.

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in large numbers, in fact all engineer material not of regulation pattern was supplied from the engineer park.*

Trench engineer depots.

In the advanced trenches, were established numerous small engineer depots, which moved forward with the infantry, and did work connected with the sapping and mining.

Intermediate engineer depots.

Between the trenches and the engineer park were intermediate depots, which acted as a sort of reserve to the trench depots, and frequently obviated the necessity for sending back the whole way to the engineer park. Their position was determined partly by convenience and partly by the features of the ground, since they had to be at the same time well protected and quickly accessible from the front. Although divisional in their character their number was not restricted to one per division, nor did they act as forwarding stations for stores and tools, which could be sent direct from the advanced depot.

Supply.

From the base depot at Dalny supplies were forwarded to the Third Army as follows:—

To the 1st and 9th Divisions, the siege artillery and the 2nd Field Artillery Brigade—by rail to Chang-ling-tzu, thence by cart or pack transport to Tsao-chia-tun.

To the 11th Division—by sea in Chinese junks as far as Ho-kou, a town on the south coast of the peninsula, opposite the Hsiao-ping Islands, and some fifteen miles from the divisional Head-Quarters. The ordinary daily supply from Dalny to Ho-kou, representing the requirements of the 11th Division, varied from thirty-five to fifty tons.

A tramway of two feet six inches gauge was laid on the northern road from Dalny as far as the village of Pan-tao, whence, in case of interruption of the junk traffic by bad weather, supplies could be forwarded by cart to the 11th Division, a distance of eighteen miles.

At Chang-ling-tzu and Ho-kou were intermediate depots where one month's supplies were kept. From these two depots the supplies were taken by the divisional supply columns to their divisional supply depots at the front, the chief intendance officer of each division indenting direct on the intermediate depots, subject to general control by the chief of intendance at the Third Army Head-Quarters.

The system of supply from Chang-ling-tzu depot to the 1st Division may be taken as typical of that in force throughout the army. The divisional supply depot was at Hou-sha-ho, about six miles north of Head-Quarter Hill. From Chang-ling-tzu to Hou-sha-ho supplies were brought up by the divisional supply columns, supplemented by hired Chinese carts. Officers com-

* See also p. 150.

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manding units indented for supplies through the intendance officer attached to the divisional Head-Quarter staff. Everything was sent up from the divisional depot on pack animals, as the country was mountainous; under ordinary circumstances carts would have been used.

Transport.

The ordinary transport of the Japanese army was used, supplemented by Chinese carts. There was no attempt to employ mechanical road transport.*

Medical. (Map III/6.)

Well to the front, either in the trenches or in some sheltered ravine, were situated the battalion and main dressing stations; behind these were the field hospitals, of which the 1st and 11th Divisions had three apiece, while the 9th Division had four. The field hospitals had no fixed positions, but moved according to the requirements of the fighting.

Next came the stationary field hospitals, of which there was one to each division, situated respectively at Shan-chien-pu, Tsao-chia-tun, and Lung-kou, all three villages being behind the line of the hills among which were the siege batteries. These stationary field hospitals remained in the same positions throughout the siege.

The sick and wounded were collected from the dressing stations, either directly or through the field hospitals, into the stationary field hospitals, and from the latter those cases not likely to recover within a short time were evacuated to a line of communication hospital at Chang-ling-tzu, thence by rail to the large base hospital at Dalny, and ultimately, if necessary, to Japan.

Decentralization.

The siege force having been finally organized, decentralization was insisted upon to the utmost, every man, from the commander-in-chief down to the sapper who worked in the trenches, having his definite task allotted to him, and being held personally responsible for its execution. Interference with subordinates was avoided whenever possible.

In the zone of attack each divisional general had almost unlimited discretion inside his own section; in a similar manner he delegated authority to his brigade commanders, and so on down the scale. The central authority at army Head-Quarters, however, was kept fully informed of all that occurred, so that devices found successful in one part of the attack could be recommended for trial in some other part. The general staff, moreover, paid constant visits to the works. But arrangements for reserves, for reliefs, for repelling sorties, etc., appear to have been made by the troops actually on the spot.

* See also "Railways," p. 172.

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Excessive decentralization had the disadvantage that it tended to a lack of sympathy between the higher commanders and the troops in the firing line, and towards the end of the siege complaints from regimental officers were occasionally heard, to the effect that the generals seemed to forget that the men were only human.

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APPENDIX K.

THE EMPLOYMENT OF ARTILLERY IN THE ATTACK. SIEGE WORKS. MINING. GRENADES. TELEGRAPHS. RAILWAYS. BALLOONS. SEARCHLIGHTS.

*Japanese Siege Artillery.**

Generally speaking, of the ordnance which composed the siege train the mortars and howitzers were used for indirect fire, while the guns fired direct; but the two naval 4·7-inch guns at E., and the six 4·7-inch bronze guns at S (Map III/2) used indirect fire. Since those pieces using direct fire offered the best target, they naturally drew the heaviest reply, and it was in the direct firing batteries at G and M that the proportion of casualties was highest. Damage to material was amazingly small throughout. All the siege guns belonging to the land forces were on overbank carriages allowing of ample cover for the detachments; the emplacements were sunk till the guns came nearly level with the natural surface of the ground. The platforms were of wood, of a regulation pattern sent in pieces from Japan and put together on the spot.

The naval 12-pounder and 4·7-inch guns were on low field mountings, and the crews were exposed in no small degree, with the result that casualties were numerous. The 4·7-inch guns at G were among the most active of the heavy ordnance used by the Japanese. They can be taken as typical of the direct-firing artillery, and an account of them may therefore prove of value. (Plate XVI.)

Battery of four 4·7 inch naval guns.

The battery was placed on a saddle 5,000 yards north-west of Fort Erh-lung, the direction of which represents roughly the front of the battery. It was originally intended to place six guns on the saddle, but good positions could be found for four only. Two were consequently placed in blindages at E, some 1,000 yards in rear, for indirect fire. These two guns were the first to open fire against the fortress, but their position was never accurately ascertained by the Russians and the emplacements were never struck. To the front of the saddle the ground fell one hundred and ten feet in two hundred yards to a ravine, whence an undulating plain extended to the defences of Port Arthur. To the rear, another

* The Field Howitzer Regiment and Naval Brigade, being under the orders of the general officer commanding the siege artillery can be considered as forming part of the siege train.

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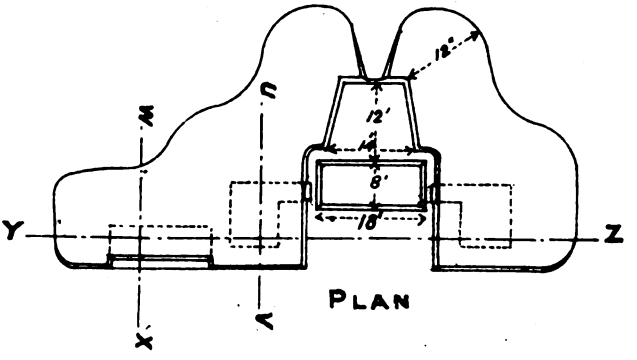
JAPANESE

EMPLACEMENT FOR Nº 4. GUN.

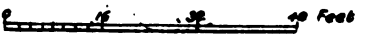


SECTION Y Z.

SECTION U.V.

SECTION W X.

Scale 32 Feet = 1 Inch.



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deep ravine separated the saddle from a spur, which on the left was higher than the battery, but on the right was lower. Behind this spur the ground sloped away for a distance of 1,200 yards, and then rose abruptly into heights 450 to 500 feet above the sea. In the clear air of the country, these heights formed a background against which the battery was almost indistinguishable.

Screens of *kao-liang* stalks, mealies, and pine branches were placed some twenty yards in front of the guns, but the dust raised at each shot was sufficient to betray their position from the outset; moreover, the powder was by no means smokeless, and the advantage of the excellent background was largely neutralized by the huge brown cloud which announced the discharge of a gun.

Positions of Emplacements.

Positions for the emplacements were chosen as follows:—

No. 1 on the reverse of a slight swell in the lowest part of the col.

No. 2 on the reverse of a rise, 45 yards left of No. 1.

No. 3 in a hollow, 25 yards left of No. 2, with a small mound protecting the left front.

No. 4 on the reverse of a rise, 55 yards to the left front of No. 3.

Comparative results of positions.

When fire was first opened on the 19th August, it soon became apparent that nearly all the return was directed upon Nos. 1 and 2. After a few days it was noticed that a patch of conspicuous white rocks, some sixty yards to the front of the battery, and between these two guns, was receiving a large number of shells. The rocks were at once blown up, and their site was covered with turf and branches. Whether the mischief was already past recall, or whether Nos. 1 and 2, being in the lowest part of the col, offered the best target, is uncertain, but the fact remains that during the whole time the battery was in position these two emplacements suffered most, and the two most serious mishaps fell to their lot. Men not at the moment in the emplacement, on hearing a shell approaching, would frequently take cover behind the parados which protected the rear of the gun. On the 26th August, a small high-explosive shell burst in rear of No. 1, and sent some of its splinters among the men behind the parados, killing the lieutenant in charge of the gun, and wounding three men more or less seriously.

On the 27th October, it appears that the men of a relief crew were sheltering behind the parados of No. 2, when a 10-inch shell landed upon it, taking away a large portion, but bursting upwards and injuring no one. A few seconds later a second 10-inch shell struck the same spot, killing four and wounding four of the men behind the bank. A splinter entered the door of the adjoining shell room, and seriously injured a man there. The gun and crew were untouched.

No. 3, in its small depression, appears to have escaped best. No. 4, on its rather prominent rise, came in for a fair number of shells.

Plate XVI has been shaded to show the varying intensity of the

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fire received, the shading being deepest where the shells fell thickest. Although the whole ground was covered with splinters, and pitted everywhere with shell craters, the right rear was by far the most heavily marked. Here many hundred shells fell within a small space, and the ground resembled a ploughed field, but during the three months that the battery was in position, no gun was so much as injured by the enemy's fire.

Construction of emplacements.

The emplacements were first constructed by men from the heavy artillery, but were added to and strengthened by the Naval Brigade. Except as regards the space inside the emplacement and the parados behind the gun, which were the same in all cases, no fixed design was followed. The shape of the ground determined the height of the wings. Inside the emplacement this was on an average five feet, but outside the left of No. 1 it reached nearly nine feet. The guns being on naval field carriages, in which the recoil was absorbed by the mounting, it was not necessary to allow for running back, and after the gun was put into the emplacement, the parados was built close up to the point of the trail. Rolls of sacking were jammed in behind the trail to prevent damage to the parados. This system enabled the actual gun pit to be kept very small, and helps to account for the immunity of the guns; but something must also be attributed to sheer good fortune, for the Russian practice was at times very accurate. The guns stood on a rough platform of planks, with iron plates for the wheels.

Cover.

Each gun pit was provided with a number of covered recesses, one of which was used for ammunition, and held forty rounds for its particular gun. The others provided cover for crews. In all cases the entrances were covered by the parados.

Opposed as the battery was to every kind of gun from a 12-pounder to a 10-inch, and to howitzers up to 11 inches calibre, the overhead cover was in no sense shell-proof; for even on hard ground the 10-inch shells from Electric Cliff made craters 15 feet long by 10 feet wide and 3 to 4 feet deep. The timbering was light, about 6 inches by 9 inches, and the earth averaged 2 feet 6 inches in thickness, being usually packed in naval coal bags. On the 6th September, a large shell from Fort Erh-lung landed on the right wing of No. 1 gun emplacement, the gun not being in action at the time. Bags, earth, and timber went flying in all directions, and men came scrambling out of the ruins to find cover elsewhere, but nobody was hurt.

Magazines.

The above remarks apply also to the magazines, which were three in number, situated in the ravine in rear. They consisted merely of recesses 10 feet wide, driven into the bank far enough to get a height of about 10 feet on the face. This was supported by sheeting, and a roof of two feet six inches of earth in coal sacks, laid on 6-inch by 6-inch timbers, was put on the top, flush with the natural surface. The sides were built up with coal sacks where necessary. On the right, where the enemy's fire was heaviest, a bank of earth was made in front of the magazine. No magazine was ever

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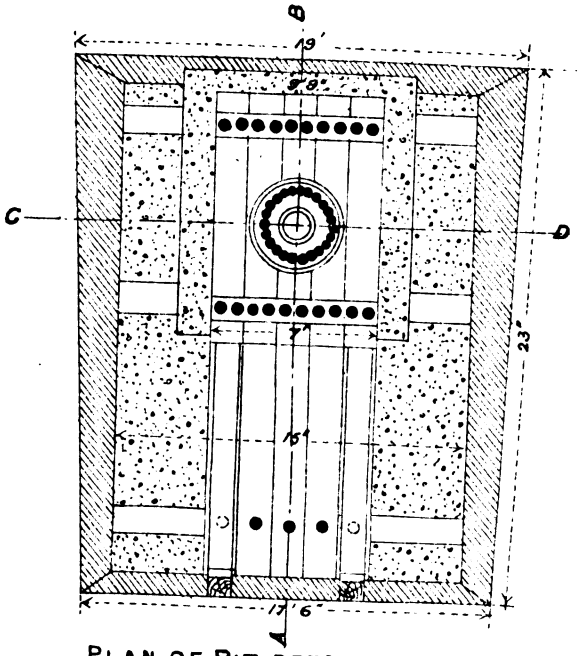
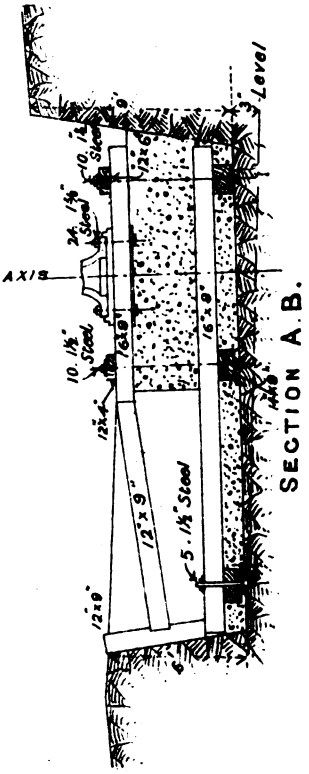
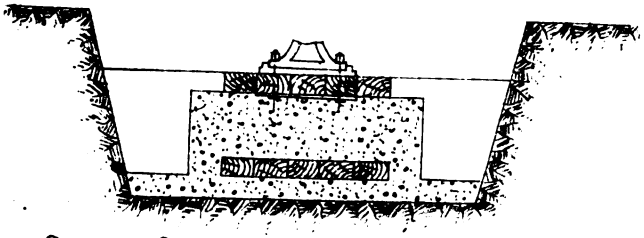
JAPANESE PLATFORM FOR 6-INCH GUN



PLAN OF PIT BEFORE FILLING IN



SECTION A.B.



SECTION C D. THROUGH AXIS OF PIVOT.

Scale of Feet.

0 1 2 3 4 8 12 16 FEET

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struck. These three, which acted as expense magazines held between them four hundred and forty rounds, or one hundred and ten rounds per gun. The main magazines were some distance to the rear, and the battery supply was replenished every day by ammunition brought up on hand carts.

Quarters for crews. The men lived in tents, pitched either in the ravine above the battery or on levelled places near the magazines. Water could be got from the ravine,

Hospital. A small dressing station was kept close to the central magazine, wounded men being at once carried on stretchers to the hospital behind the heights in rear.

A telephone from the battery communicated with the officer commanding the Naval Brigade, in his observation post on the hill to the left.

Observation of fire. A look-out was also kept from a trench to the left front of No. 4, to warn the crews when dangerous shells might be expected.

Battery of four 6-inch naval guns. The 6-inch naval guns at D (Map III/6) were mounted on special platforms, which furnish an excellent example of hasty concrete work in the field. Plate XVII shows the system of construction.

Construction. The battery was built in two stages, Nos. 1 and 2 guns being mounted early in September, whereas Nos. 3 and 4 were not put in until October, 1904. Hence arose a difference in type between the halves of the battery.

In making the emplacements, the hole was first excavated to the required depth and size, the three lower transoms, with the bolts inserted, were placed in position and the intervals were filled in with concrete. Then came the five planks of the lower deck. On this deck, in order to save the time required for filling in wet material, a concrete block from the Dalny wharves, weighing 2½ tons, was put into position where it would come immediately under the pivot of the gun. Round this block a box was built into which wet concrete was filled, thereby fixing the bolts. The upper deck, packing ring, etc., were put on after the concrete had set. Only three or four days were allowed for hardening, and there seems to be ground for believing that the guns were fired within a week of commencing work on the excavation.

In the case of No. 1 gun, a slope of three degrees was given to the deck, with a view to getting more elevation, and the upper deck was supported by struts butting against two posts in rear. For No. 2 gun, the slope of the deck was retained, but the struts were omitted.

Further experience showed that the extra elevation given by the slope of the deck was unnecessary, and when the emplacements for Nos. 3 and 4 were constructed the deck was made level, the struts being omitted as in the case of No. 2.

These mountings gave unqualified satisfaction, no attention being required beyond an occasional tightening of the nuts. The guns swung round into any position with the greatest ease after they had been in use a month, and the platforms gave no signs of straining.

Nos. 1 and 2 guns were placed a little in rear of the crest, and

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in order to allow of their laying directly on the Russian works,

Site.

cuttings were made in the top of the hill, in one case reaching a depth of six feet; these cuttings acted the part of embrasures. A fairly heavy fire was at times directed on to Nos. 1 and 2 guns, but although there were a few casualties, the damage to material was nil. Nos. 3 and 4 were placed almost exactly on the crest, and were much more vulnerable than Nos. 1 and 2, but by the time they were brought into action the intensity of the Russian fire had much decreased, and they were never subjected to the same test as were the other two. Casualties were few and no damage was sustained. The Russian fire mostly went over the battery, many of the shots falling into the ravine at the bottom of the valley in rear. On the northern side of this valley the ground rose to a series of hills, of which some reached a height of 480 feet above the sea, and formed a good background. Two 6-inch guns in Fort Ta-yang-kou North proved troublesome, although far heavier shells were fired from the ships in harbour and from the coast batteries.

The magazines were of the same type as were employed in the 4·7-inch battery previously described, viz., excavations in the hill-

Magazines.

side, with three or four feet of earth overhead, but open to the rear; earth was banked up in front to a height of four or five feet and a thickness of ten feet. Two magazines were originally provided for Nos. 1 and 2 guns, and a third was added for Nos. 3 and 4. This last was close up to the line of guns; but since most of the Russian shells went high, the magazine was really safer close up to the front than it would have been farther to the rear. These three acted as expense magazines, and held the day's supply of ammunition; it was admitted that they were not proof against the projectiles to which they were exposed but no damage appears to have been done to them. The ammunition required for immediate expenditure was kept in recesses adjoining each emplacement.

The arrangements for ammunition supply were similar to those for the 4·7-inch battery, but owing to the greater size of the 6-inch

Communications.

projectiles the number of rounds was smaller. A trench tramway connected the battery with the magazine in rear, and with the artillery and engineer parks. An excellent road was also constructed to connect the battery with the main road on the east.

Command.

The battery was controlled by telephone from the naval observation post.

Owing to the difficulty of getting good cover for men in the vicinity, the crews, when not on duty, lived at some consider-

Quarters for guns' crews.

able distance. Each gun had three crews, of which one was on duty in the battery, one fetching ammunition, and one resting or doing odd jobs. There appear to have been two shifts, day and night, the reliefs being at 6 a.m. and 6 p.m.

This naval battery was one of the mainstays of the besieging army, and the coolness of the bluejackets under fire was exemplary. The commander claimed the credit for the complete wrecking of

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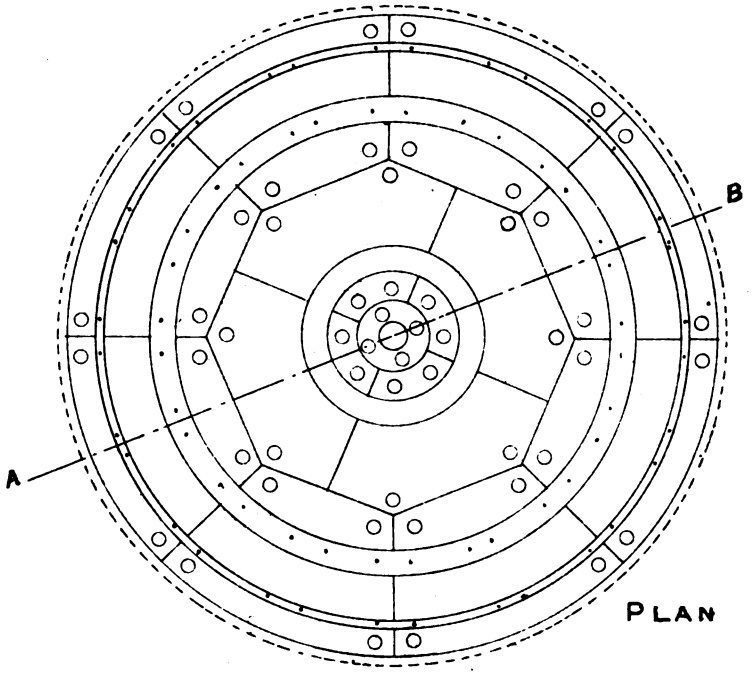
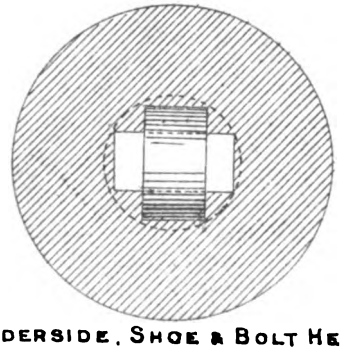
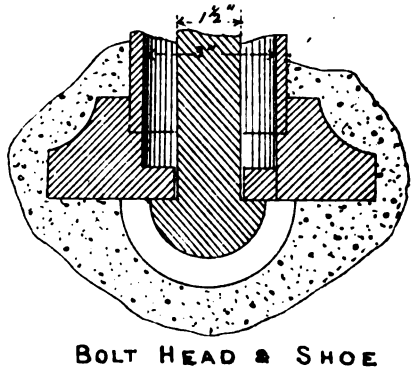
Plate XVIII.

PLATFORM FOR JAPANESE 11-INCH HOWITZER.





UNDERSIDE, SHOE & BOLT HEAD



BOLT HEAD & SHOE

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Remarks.

the An-tzu Shan defences, against which his guns made admirable practice. In addition to the direct fire on the Russian works the battery was used to shell the ships, firing both by day and night. The rigidity of the mountings rendered the guns of great value for this purpose, allowing as it did of an accuracy not attainable with the rougher field mountings of the 4·7-inch guns.

Pieces using indirect fire.

The mortars and howitzers with the Third Army employed indirect fire throughout, with the exception of a few 6-inch mortars, which were used at short range for the direct battering of the gorges of Forts Chi-kuan and Erh-lung. Except for the platforms of the 11-inch howitzers there was nothing remarkable about the emplacements. The pieces stood almost in the open, surrounded at most by splinter-proof breastworks, and no great care was taken for the protection of ammunition, reliance being chiefly situated on concealment. Indirect firing batteries were always situated at the bottoms of valleys, for it was not considered sufficient merely to retire them behind the crest of a hill.

Platform for 11-inch howitzers.

The platform for the 11-inch howitzer was circular, made of cast iron about two inches thick, and stiffened by thickening where necessary (Plate XVIII). It was made in twelve sections round a central circular pivot. The sections were held down by fifty-two bolts, and were clamped together by an inner and an outer ring of iron, each about nine inches by one and a half inches. A racer came near the outer edge. Round the outside of the platform ran teeth to engage in the traversing gear on the carriage. The diameter of the platform was about twenty feet. In constructing the platform, a circular hole slightly over five feet deep was made, and concrete was filled in to a depth of one foot six inches. The "shoes" shown in the Plate were then put in, and on them vertical 3-in. iron pipes, three feet three inches long, were placed in the positions required for the holding down bolts. Concrete was then filled in for three feet more, and levelled. Two layers of timber, about seven inches by twelve inches, crossed, were laid on the top of the concrete. The holding down bolts had oblong heads, locking to the shoes by a right angled turn. The play of the bolts inside the pipes allowed for the adjustment of small errors in position.

Enough has been said to show that the siege operations were extremely elaborate, and further details are hardly necessary except as regards the arrangements for the control of fire. As already explained the whole of the siege artillery was under the control of a specially appointed officer whose orders were transmitted by telephone, supplemented occasionally by a written message. From his Head-Quarters three wires were laid to the central telephone exchange, whence he could communicate with Dalny or with any part of the attack. He had, in addition, direct communication with General Nogi, with each of his siege artillery regimental commanders, with the officer commanding the Naval Brigade, with the officer commanding the Field Howitzer Regiment, and

Fire-control.

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with his observing officers, two or three in number. Each regimental commander had wires from his observation post to his company or group commanders.* The battalion commanders appear to have been ignored, probably because their work was mainly administrative. If the general officer commanding the siege artillery wished to communicate directly with a company commander, the regimental commander put the line through.

The general officer commanding the siege artillery assigned an objective to each regiment, or in the case of the heavier ordnance to each group or pair; he also controlled generally the rate of fire, and detailed approximately the number of rounds to be expended per diem by each regiment or group, as the case might be.

Salvoes were used but rarely, the ordinary rule being individual fire by each piece, at no fixed interval. Except to support an assault, or to repel a sortie, shrapnel was seldom used by the siege pieces, since in most of the important positions the Russians prepared overhead cover, against which shrapnel was found to have little or no effect, although it was fired at the close of a heavy bombardment, just before an assault was delivered. The Japanese were decidedly economical in the expenditure of their ammunition, and at night fired very little except for an occasional shot from the 11-inch howitzers and naval guns; as the object of these shots was merely to harass the garrison, accuracy became of minor importance.

At the beginning of the siege little attempt was made to use oblique and cross fire, but before the capitulation their value had been fully realized. A comparison of Maps III/2 and III/6 will show that at first the Japanese guns were facing the front of attack, but that the line of siege batteries was extended during the siege until some of the Russian works were being taken almost in reverse.

Although before the assault in August the objective works were heavily bombarded, there seems to have been a total absence of system in the selection of targets, but the later bombardments were carefully thought out, and gradually increased in intensity until the time arrived for the assault. Shrapnel was then poured into the battered works and into the approaches by which reinforcements might arrive, and fire ceased only at the moment when the assault was launched.

Ranging, and observation of fire.

No telemeters, plotters, or directors were used. An excellent map, on a scale of $\frac{1}{20000}$, was supplied to all officers commanding units. It was ruled in squares of one centimetre (about ·4 inch), and by means of it the fire of the various groups was directed. On each copy were plotted the positions and lines of fire of the guns under the control of the officer in whose possession it was, with the arcs of view of his observation posts, &c. The map was the result of a triangulation made in 1894, and the ranges were very fairly accurate.

* The pieces were grouped, the heaviest usually in pairs or fours, the others in batteries of four, six, eight, or even twelve, according to the ground.

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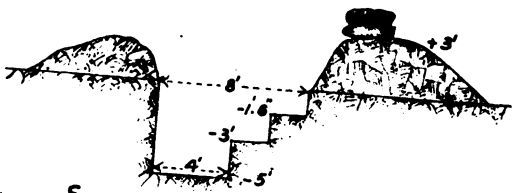
JAPANESE SIEGE TRENCHES.

FIG. 1.

STANDARD TYPE OF COMMUNICATION

FIG. 2



STANDARD TYPE OF PARALLEL

FIG. 3.

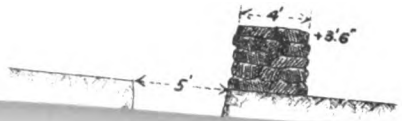
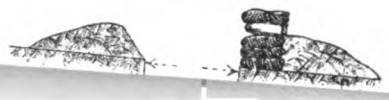
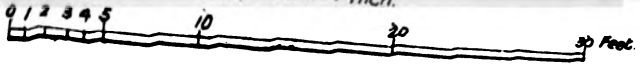


FIG. 4.





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Each group of guns had an observation post some distance removed from it, and each observing officer was supplied with a double Zeiss hyposcopic telescope, on tripod mounting, with vertical lines. Communication with the guns was maintained by word of mouth, a chain of orderlies being used when the distance was great enough to require it; the telephone was only used from officers commanding gun groups upwards.

Japanese Field and Mountain Artillery.

The field and mountain guns were almost always used for direct fire. At the beginning of the siege they were kept back at ranges of from 3,500 to 5,000 yards, but as the Russian fire slackened they were pushed in to very short distances, ranges of 1,000 or even 500 yards being quite common. The guns were grouped in batteries, or even in battalions,* and were chiefly used to repel sorties, to keep down gun and rifle fire during the assaults, and to prevent reinforcements from being brought up. The wagons were kept fairly close to the batteries, but the horses were several miles in rear.

In some cases mountain guns were placed actually in the infantry firing line. Although machine guns were found to be more suitable for this work, the object of mountain guns at short range was to destroy the cover of the enemy, an end not to be attained by any expenditure of small-arm ammunition; concealment became impossible, and to meet the enemy's fire on level terms was all that could be hoped.

At the longer ranges the guns were almost invariably sunk in pits and concealed from view by *kao-liang* stalks; some batteries were provided with an alternative position a short distance away. In places, dummy batteries were used with success. When pushed closer in, say to 1,000 or even 500 yards' range, the movement was made at night, the guns being carefully concealed and ordered not to fire until the moment of the assault, or of whatever operation might be in progress. At the shortest distances the guns were provided with splinter-proof blindages of which the embrasures were closed with half-inch iron plates removable at will.

The fire was directed from battery observation posts, and by telephone, in a manner similar to that of the siege artillery. Once their orders had been given, superior officers had little to do beyond watching effect from their own blindages. Salvoes were only used occasionally, and *rafales* were never attempted.

Fire-direction.

The use of high-explosive shells was fairly extensive, but in the general turmoil of a bombardment it was difficult to judge of their effect.

Siege Works.

Although an enormous amount of labour was expended by the Russians on their defences, very little was done throughout the

* A Japanese field or mountain artillery battalion consists of three batteries.

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siege towards checking the Japanese saps by counter-approaches, nor was counter-mining used to any purpose. It will, therefore, be sufficient if the Japanese methods are described, reference being made only to such Russian devices as proved effective.

Method of construction.

The Japanese sappers, being pressed for time, found the usual methods of constructing approaches by sap too slow. They therefore almost entirely dispensed with forks, rollers, &c., and sent men out of the trenches to build a parapet, protected only by such cover as they could carry either in the form of a steel shield or of a filled sandbag. By this method they would usually construct about five yards of parapet, under cover of which the trench would be excavated. From the end of this trench a fresh start would be made.

The shields were, as a rule, steel plates, roughly three feet by two feet, with a leg to hold them upright. These were placed in a row, and the earth from the trench was thrown behind them until the parapet formed was sufficiently strong to admit of their removal. In rocky soil, the parapet had to be built of ready-filled sandbags. This method involved great exposure of the men, but was found to be the only way of making progress when the ground became too hard to dig readily. All new work was done at night, except in dead ground. Improvements were frequently carried out by daylight.

Difficulties encountered.

At long ranges, five hundred yards and upwards, work could be carried on without difficulty, the searchlights of the defence not giving any trouble. At medium ranges, from five hundred to two hundred yards, the work became dangerous, but up to the shorter distance no great hindrance occurred. It would appear that the artillery of the attack could, to a large extent, prevent the searchlights from interfering with the sappers. Even up to one hundred yards, or thereabouts, the besiegers could count on building fifteen yards of sap in one night. At less than a hundred yards the defenders could annoy the working parties by small sorties, or by throwing hand-grenades, bundles of rag soaked in oil, &c., and the siege works could be illuminated by star-rockets. These distances were, however, purely arbitrary, for no two cases were alike, the difficulties varying according to the ground and the activity of the local defence.

Damage by artillery fire.

Remarkably little damage was done to the trenches by the artillery of the defence. Even the widest of parallels offers but a poor target to indirect fire with indifferent observation, while the direct-firing guns of the fortress were placed in such conspicuous positions that their fire could easily be kept down by the artillery of the attack. The most annoyance was caused by the small quick-firing and machine guns. The defence had numerous small 37-mm. (1·2 inch) Hotchkiss guns, with very short barrels. These little weapons fired the same sized shell as the South African pom-pom and formed a most effective means of hindering work on a sap-head, as did also a four or five-barrelled Nordenfeldt firing 1-inch steel shot, no portable shield being capable of withstanding their pro-

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Plate XX.

203 Metre Hill.

JAPANESE APPROACH, ABOUT 150 YARDS FROM RUSSIAN WORKS,
18TH NOVEMBER, 1904.

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jectiles. Both these weapons can be mounted without difficulty in an infantry trench, can be easily moved, and will fire through a loophole differing little from that for an ordinary rifle. On the other hand the stream of bullets from a maxim gun, although alarming, is not very dangerous to men behind shields.

To resist the small shells, the sandbag parapets were made four feet thick. Large numbers of empty grain sacks, which when laid flat measured three feet by two feet, were brought from the Chinese coast ports. They were cut in half and re-stitched by infantry working parties under engineer supervision. Two of these sandbags, laid end to end, gave four feet of thickness to the parapet, and this fact may have determined its dimensions, apart from the resistance to fire.

Sandbags.

The soil was generally favourable to sap work, as it stood well without revetment, but in places it was very rocky. The work in the sap-heads was carried out by engineers or, when sappers were not available, by infantry under engineer supervision, while the infantry trench guards in the neighbourhood endeavoured to keep down the fire from the enemy's loopholes.

Soil.

Working parties.

Latrines were very freely provided, and usually took the form of a small wing trench, in which holes were dug. They were occasionally emptied by Chinese coolies. Refuse from cook-houses was merely thrown out of the trenches, and allowed to freeze or rot according to the weather. Men were not always scrupulous about using the latrines.

Sanitation.

Owing to the numerous sharp turns in the trenches, it was impossible to use stretchers; wounded men had consequently to be carried "pick-a-back" until sufficient space was found, but with large ravines on all sides dressing stations could be safely placed quite close to the front, and there was generally room for stretchers in the ravines and watercourses.

Disposal of casualties.

Some typical sections of siege trenches are shown in Plate XIX. They give a good idea of the average dimensions under various conditions, but extreme types were sometimes met with. For instance, on 203 Metre Hill, where the ground was of solid rock, the approaches hastily thrown up during the actual fighting consisted of sandbag breastworks. There was no trench. The advanced saps before they were widened were sometimes four feet deep, and so narrow that it was difficult for two men to pass each other.

Types of trench.

The trenches below the glacis of Erh-lung Shan were very little exposed, and approximated to the standard type. An assault was delivered from the parallel shewn in Fig. 4, Plate XIX, after which the ground on which it lay became dead, otherwise it would doubtless have been deepened. Filled sacks at intervals were used as steps. The approach against 203 Metre Hill was also used as a fire trench. The men were expected to sit sideways to the loopholes, an arrangement which was found to answer admirably.

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The advanced parallel against Q Battery was under such a concentrated fire that it was found necessary to blind it. The splinter-proof covering was put on as the trench was dug (Plate XIX, Fig. 8).

Map No. III/4 gives some idea of the maze of trenches constructed. It will be noticed that wing trenches occur in places with no apparent object. These were to repel counter-attacks. In all cases it is hard to say where approaches end and parallels begin, since the former were frequently used as fire trenches and the latter as communications.

Loophole shields employed in attack and defence.

At the short distances to which the Japanese saps were pushed in the closing stages of the siege, the common sandbag loophole became quite useless as a protection to riflemen. At distances of from one hundred and fifty to thirty yards it was impossible for any man to remain at such an opening. Consequently various forms of protective shields were adopted, of which several are shown in the accompanying drawings. (Plate XXI.)

The pattern exclusively used by the Japanese was fixed to a wooden hopper by four wire nails. This hopper was built into the sandbag parapet of the sap, with the slit in the shield placed vertically, and the four nails were found sufficient to hold the shield in position under any but the most exceptional fire. The shield being on the outside of the parapet, it was covered with sacking similar to that of which the sandbags were made, a ragged hole being left at the slit, through which the muzzle of the rifle could be pushed. This device would be effective until a bullet struck the plate so that the splinters cut the sacking and rendered the plate visible. When this happened at the shorter distances the plate would sometimes be shot to pieces. The usual size of these shields was ten inches by ten inches, but at the end of the siege a pattern fourteen inches by fourteen inches was being made. None of the larger pattern seem to have been used.

All Russian shields were roughly made, and their dimensions varied considerably. In every case the Russian shield was inside the parapet, no attempt being made to conceal the loophole. The resistance was always ample against small-arm fire, in some cases the plates being doubled and held together by a rivet at each corner. The shield was fastened in a variety of ways; sometimes it was built or jammed into the sandbags, sometimes it was secured by spikes or by strips of wood fastened across it. The favourite form of Russian shield was that marked A. Pattern B was fairly common. In this case it must have been impossible to move the rifle once it was inserted in the hole. A movable piece of metal, of the same thickness as the shield, closed the bottom of the aperture. This piece hinged at one side on a rivet; at the other side it was secured by a bolt. The shield was fastened to the loophole with the hinged piece inside. Shields of pattern C were used for machine guns.

The material of these shields was mild steel, except in the case of C, where the metal was harder. Less damage appeared to have been done to the Russian than to the Japanese plates, but as the

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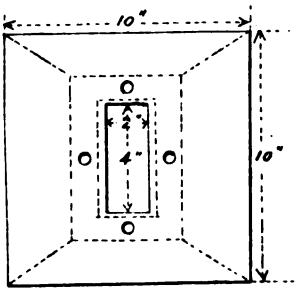
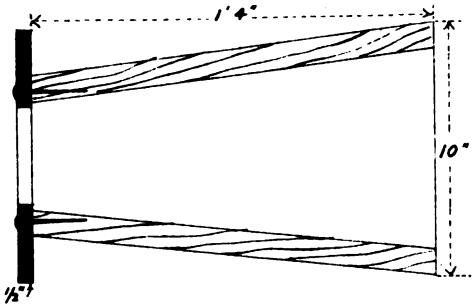
JAPANESE HOPPER LOOPHOLE.

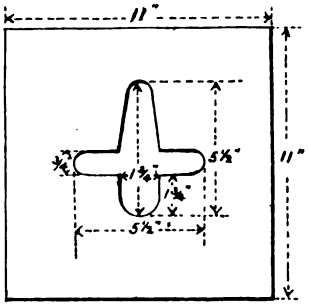


½" THICK
OUTSIDE OF SHIELD

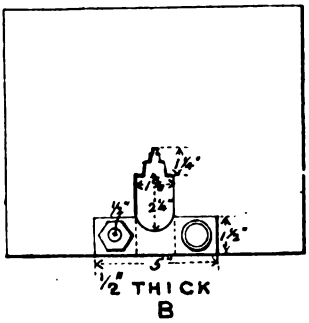


VERTICAL SECTION

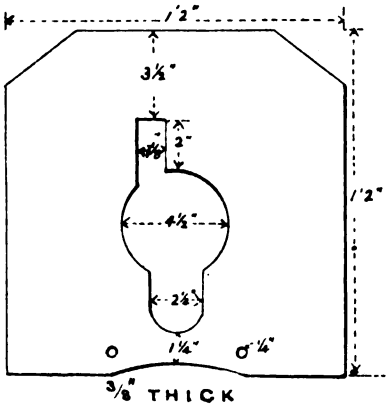
RUSSIAN LOOPHOLE SHIELDS.



⅝" THICK
A



½" THICK
B



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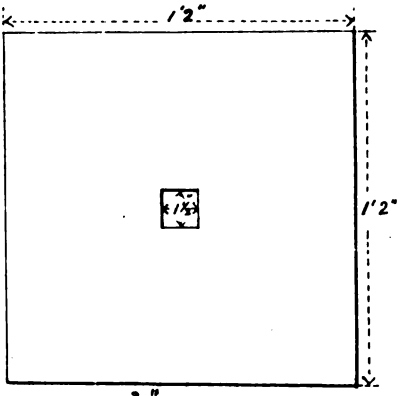

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former were almost invariably the thicker a comparison is difficult.

Mining.

Details of the mines driven will be found in Chapters XXII, XXIII, and XXIV, in the narrative of the fighting.

There is a great difficulty in obtaining reliable information about the subterranean warfare, principally owing to the fact that it is impossible for men to observe accurately under such trying conditions. Generally speaking, the mining operations were disappointing; the assailants did not always apply their energy to the best advantage, while the countermining of the defence was desultory and ineffective.

The attack was never adequately met by countermine galleries under the glacis. When such galleries were constructed the work was started too late.

The usual method adopted by the defence was to roll explosives from above into the ditch, with a view to destroying the entrances to the mine galleries. Paint drums, cartridge cases for 6-inch guns, &c., were filled with guncotton and rolled from the parapet on to the entrances; they were fired with Bickford's fuze. To protect the entrances from this particular danger heavy pent-houses of rails, timber, and earth were built over them, and were so arranged that anything coming from above would roll clear. Nevertheless these explosives caused a great deal of trouble and loss to the besiegers.

Resistance.

The soil varied from a hard earth to quartz, the latter requiring blasting. Consequently the daily rate of progress, both of shafts and galleries, varied from ten or twelve feet down to a few inches.

Soil, progress.

No attempt was made to use mechanical mining tools.

Mechanical mining.

The galleries being in every instance very short, they were made of small section.

Dimensions.

A Japanese forms an ideal miner, short-legged and muscular, and owing to his habit of squatting on the floor he can be quite comfortable when working in a low gallery which would quickly exhaust the average European.

The dimensions of those galleries which were undestroyed at the end of the siege were three feet three inches high by two feet nine inches wide, inside the sheeting.

Sheeting was almost invariably used at the mouth of the gallery, cases being sometimes employed farther in.

Practically all the frames, sheeting, and cases were made on the spot, in the advanced engineer depots which were distributed all along the front. The cases were made of the widest boards obtainable, their width being in some instances eighteen inches.

A gallery directed against the Chinese Wall between East and West Pan-lung was unlined, oval in section, four feet high by three feet wide, the top averaging three feet below the surface. It ran for forty yards from the advanced parallel in the valley,

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bringing the end to about thirty yards from the salient in the Chinese Wall. Here it ended in an opening to the upper air, large enough to allow of a man climbing out. There was absolutely no trace of the mine to be seen above ground.

Shafts were merely irregular holes in the ground, the sides supported by sheeting where necessary.

Ventilation. For ventilation a rotary blower was used, driving air up a four-inch zinc pipe.

Single charges were sometimes fired with Bickford's fuze.

Firing. When several charges had to be exploded simultaneously, an electric exploder was used.

It is doubtful how much real advantage resulted from the use of mines against the permanent forts on the front of attack.

Remarks on the mine attack. When the Japanese occupied the craters in December, they were in no instance a single yard beyond the point to which they had penetrated on the 26th November. It was never the parapet, but the retrenchment, which held them back. It must remain a matter of opinion whether in each case the final success was due to the mines themselves, to the weakening of the defenders' *moral*—caused by exhaustion, bad leading, and the knowledge of the presence of the mines—or to the bombardment during the period from the 26th November till the fall of the fort.

On the other hand, against the infantry works in the intervals, the attackers had reached a point where further sapping was rapidly becoming impossible unless something could be done to shake the defence. Had the resistance been prolonged, the mines in these intervals would have been fired, and there seems little doubt that an effective lodgment must have been made on the Chinese Wall, which would have been an excellent point of departure for further siege works, while such a material advance must have greatly encouraged the attack. The evacuation of the Chinese Wall rendered the mines superfluous.

Grenades.

Japanese hand grenades. After trying various types of hand-grenade the Japanese adopted two patterns, of which one was a tin cylinder one and a half inches in diameter and ten inches in length, while the other was a similar cylinder, one and a half inches in diameter, but only eight inches long. Both were filled either with dynamite or with picric explosive. They were manufactured in the engineer park from the tin linings of empty biscuit boxes. Their shape made them very convenient both for carrying and throwing. A detonator inside the grenade was ignited by a length of Bickford's fuze projecting from one end of the cylinder. Men carrying grenades were provided with a piece of slow match, made of grass rope impregnated with saltpetre, with which to light their fuzes. The fuzes were cut to burn for seven seconds, which was found to be too short a time to admit of an enemy throwing back the grenades. Little or no attempt was made to use a grenade exploding on

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impact. Its greater convenience was considered to be more than counterbalanced by the increased danger attending its use.

Russian hand-grenades.

The type of hand-grenade used by the Russians at the beginning of the siege consisted of a small cast-iron shell loaded with gunpowder, and depending on splinters for effect, but various forms of high explosive grenades were afterwards adopted. In addition to their explosive grenades, the Russians used an incendiary pattern, which consisted of a bundle of rags soaked in oil, enclosing a small charge of powder. The oil was ignited before the grenade was thrown, and the explosion of the powder scattered the blazing rags in all directions.

Some attempts were made to provide percussion grenades, but the idea was finally abandoned owing to the extra trouble involved in their manufacture. Various methods of mechanically igniting the time fuzes were devised, with a view to avoiding the necessity for lighting them by hand, a matter of some difficulty in wet or windy weather. No slugs or missiles of any kind were enclosed in the Russian grenades.

Effect of hand-grenades.

The effect of hand-grenades has been immensely exaggerated. They had undoubtedly much moral effect, but the actual damage inflicted was rarely great. The detonation of a small charge of high explosive in the open air is so local in its results that men only a few feet distant feel no evil effects. In deep trenches the effect must be slightly increased, and inside blindages the explosion of a grenade may be a serious matter, but during the assaults these missiles did little more than mutilate any unfortunate wounded who were left on the ground between the trenches. Good effects might be produced against men crowded together, as in the case of stormers waiting in the advanced parallels before an assault; but the maximum range is about thirty yards, and the combatants seldom remained within this distance from one another long enough for hand-grenades to have any material effect.

Japanese Wooden Mortars.

Early in October the Japanese began using wooden mortars to throw heavy grenades into the Russian lines. In deciding on the use of wood as the material, they were influenced by the fact that in Japan fireworks are thrown from wooden mortars, which are both cheap and portable. Both mortars and projectiles were made entirely in the engineer depot, the explosives being obtained from Japan. The first calibre adopted was five inches. Later on a seven-inch mortar was introduced.

Plate XXII shows the design of mortar and projectile.* Of both calibres the length of barrel was thirty-three inches over all; the material was fir wrapped with split cane. The stand also was

* The first sight which the defenders obtained of one of these mortars, when a small sortie penetrated into the Japanese trenches, led to the report that the Japanese threw the grenades from catapults of twisted rope.

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made of fir, the total weight of the weapon amounting to about 100 lbs.

The five-inch grenade contained 3½ lbs. of high explosive, the seven-inch grenade 13¼ lbs. Their total weights were 4½ lbs. and 16½ lbs. respectively. Any deficiency was made up by the introduction of slugs.

The mortars were given a constant elevation of 45°, the range being varied by the use of a driving charge of either 10, 20, 30, 40 or 50 grammes (50 grammes = 1·76 oz.) of fine black powder enclosed in a bag of silk. The maximum range of the five-inch mortar was four hundred yards, of the seven-inch one hundred and fifty yards. About one hundred and twenty of these wooden mortars were employed. The accuracy of their fire left much to be desired, but some of the explosions were terrific. Unlike a shell which must penetrate, if only for a few inches, before exploding, the detonation of the grenades took place entirely on the surface, and produced a deafening concussion. Their moral effect, according to the statements of some of the defenders, was undoubtedly great, but there are no reliable data from which to estimate the material damage.

The grenades were exploded by Bickford's fuze, to the outer end of which the driving charge was made fast by a pair of wires, so as to ensure ignition. Two fuzes and detonators were fitted to the seven-inch grenades in order to render their action more reliable. As in the case of the hand-grenades, the fuze was cut to burn for seven seconds. An incendiary grenade was provided, the body being filled with petroleum, which was scattered by the explosion of a small charge of gunpowder hermetically enclosed in a central case. The effect of these grenades was usually disappointing, the oil being resolved into black smoke by the explosion, instead of catching fire.

Russian Heavy Grenades.

Projectiles containing heavy charges of explosives were thrown by the Russians by means of various devices. Small torpedoes were fired from tubes. Of other torpedoes the war-heads were removed and fitted with a device causing them to explode on impact. The empty cartridge cases of 4·7-inch and 6-inch guns were filled with guncotton and used as projectiles with time fuzes. Small spherical submarine mine cases were also employed. The Russians were usually above their assailants, and could roll explosives on to them, but sometimes the projectiles were fired from a smooth-bore gun or torpedo tube, and sometimes a wooden rod was attached to them and inserted in the bore of one of the smaller quick-firing guns. A fuze had usually to be ignited before the gun was fired, and cases occurred in which the gun missed fire after the fuze was lit, or in which the projectile stuck in the bore; in either case instant flight was the only course open to the gunners.

Some of these heavy charges produced very good results, a notable instance being that of the mine rolled into the Japanese

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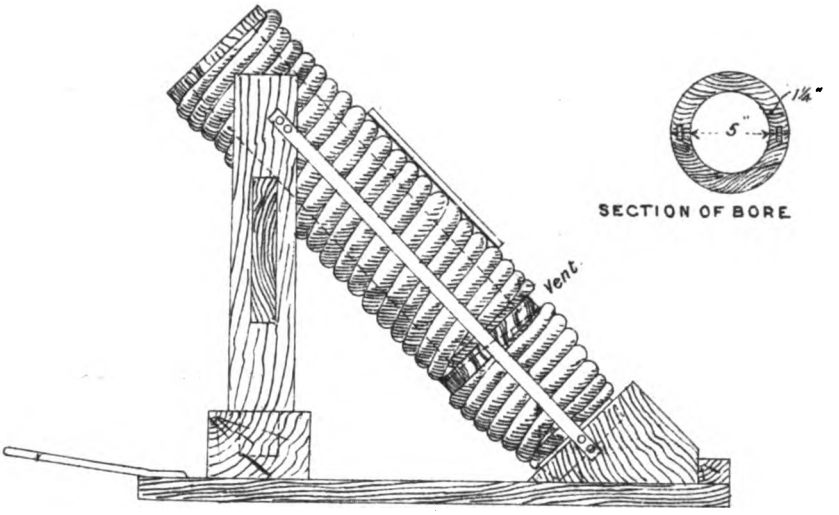
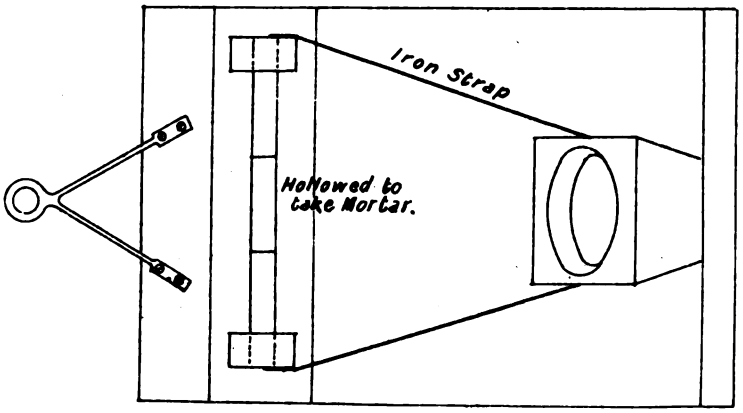
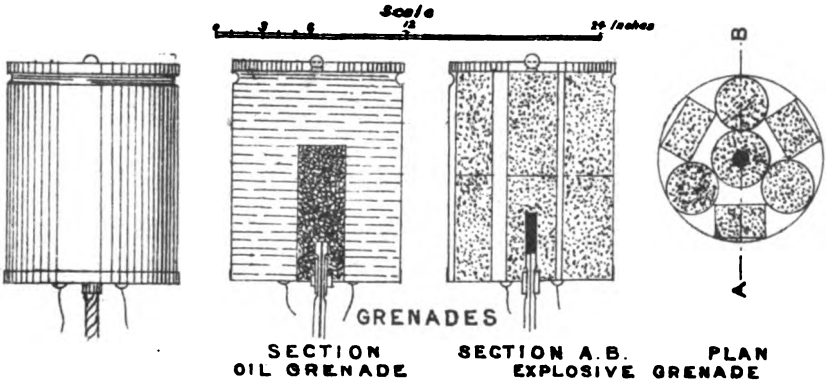
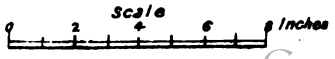
JAPANESE 5-INCH WOODEN MORTAR.









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Weller & Graham

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position on 203 Metre Hill during the night of the 22nd–23rd September, 1904.*

Protection against Grenades.

Against the heavier explosive charges protection was almost impossible, but against the hand-grenades the Japanese used screens of wire netting on wooden frames, six feet by three feet, which were propped up at night over the parapet of the trench. When matters became serious the trench would be blinded.

Telegraphs and Telephones.

The control of the telegraph and telephone system of the besieging army was in the hands of the general staff, but a major of engineers acted as director.

In order to co-ordinate the requirements of the whole army, the telegraph sections were detached from their divisions, and the men were employed wherever they were most needed, building and maintaining all lines except those for which the troops carried their own material. For instance, infantry regiments carried a proportion of portable telephone instruments and light insulated cable and laid out their own communications in the advanced trenches; even the storming parties frequently carried an instrument with them. During the siege similar equipment was provided for the artillery; this branch, however, was at first largely dependent on the army telegraphs.

Besides engineers, numbers of men from other branches and many civilians were employed.†

For all the more advanced lines the ordinary field materials were used, but a permanent line of iron wires on stout wooden poles was erected behind the line of investment, out of view of the fortress, from Chou-chia-tun in the west to Wang-chia-tun in the east. Branches of field telegraph line were led from the permanent wires.

Air line was used until within four or five hundred yards of the defences, after which field cable and the light, portable, insulated wire were employed.

The field lines were as a rule most carelessly erected, and damage to them was only prevented by great care on the part of troops using the various roads and paths. As a matter of fact interruptions were not of very frequent occurrence.

The central telegraph office and telephone exchange were placed at Chou-chia-tun. The only other telegraph offices were at the Head-Quarters of divisions, but telephones were freely supplied.

The artillery telephones were kept distinct from the general army system.

* See p. 62.

† Civil employés with the Japanese armies throughout Manchuria wore a universal pattern uniform, a special cap badge indicating the service on which they were employed. Some had the honorary rank of officers, and all were under military discipline.

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No private telegrams could be sent over the wires, and the privilege of franking official messages was most strictly limited.

Railways.

The railway from Dalny to the advanced depot was worked by the railway corps of the Manchurian armies, as were also the railway telegraphs.

The line was single, of Japanese gauge, with Japanese rolling stock; crossings could be made only at Nan-kuan-ling junction and at Ying-cheng-tzu station.

Until the capitulation, railhead was kept at Chang-ling-tzu station. Although trains of heavy material were sent on to the advanced depot, no sidings were constructed there, and no shunting could be done, so that only one train at a time could unload at the depot. All shunting was done at Chang-ling-tzu.

The narrow-gauge tramway was laid by the troops themselves, the working parties being usually drawn from the artillery; they acquired considerable skill at the work. The line was of two feet gauge, and was sent from Japan made up in lengths of six feet six inches, each length being joined to the next by a kind of hook joint. The maximum load was 1½ tons. Men alone were used for propelling the trucks. The lines were single throughout, traffic being so arranged that two loaded trucks never met. Empty trucks could be lifted from the rails to allow of loaded ones passing them.

Narrow-gauge tramway.

Balloons.

Owing to the presence of the heights encircling the fortress, the value of a balloon to the Japanese was largely discounted, since excellent positions for observing stations were to be found on the hills.

An extemporized balloon section was present at the beginning of the siege, and made frequent ascents from the plain 2,000 yards north of Feng-huang Shan, but the information obtained did not not greatly supplement that from the observing stations.

A factory for hydrogen gas was established at Tsao-chia-tun.

The observer in the balloon was directly connected with the central telephone exchange, whence he could communicate either with General Nogi or with the general officer commanding the siege artillery.

The balloon was frequently fired at by the Russians, but common shell invariably fell 1,000 to 1,500 yards short, while shrapnel burst at least 3,000 yards short.

During October the section was sent to the north.

Unsuccessful attempts were made to organize a balloon detachment inside the fortress, where it would have been of the greatest value. The Japanese relied almost exclusively on concealment for the protection of their camps and batteries, and the presence of an efficient balloon corps inside Port Arthur might have had considerable effect upon the course of the siege. See also p. 32.

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Searchlights.

Two powerful lights with portable generating plant were installed by the Japanese during August, one on the col 1,000 yards east-south-east of the naval observing station, the other on a hill near Tuan-shan-tzu. During September the latter light was brought round to the position of the former. They were too far away to produce good results, illuminating as they did both friend and foe, and since the value of darkness to the Japanese increased as the siege works drew nearer to the defences, the use of the lights was discontinued. During November they were sent to the north. Although constantly fired at they were never hit.

The projectors were kept under cover, mounted on trucks so that they could at any time be run out for use. The ordinary narrow-gauge tramway was employed for this purpose.

For a description of the Russian searchlights, see Chapter XV, Defences.

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